



GOVERNMENT OF INDIA  
MINISTRY OF  
COMMERCE & INDUSTRY

*Report*  
OF THE  
**INDIAN TARIFF BOARD**  
ON THE CONTINUANCE OF PROTECTION TO THE  
**ALUMINIUM INDUSTRY**  
BOMBAY  
1951

THE MANAGER, OF PUBLICATIONS, DELHI.  
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# ARIFF BOARD

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GOVERNMENT OF INDIA  
MINISTRY OF COMMERCE AND INDUSTRY

PTB. 195 (N)  
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**REPORT**  
OF THE  
**INDIAN TARIFF BOARD**

THE CONTINUANCE OF PROTECTION TO THE  
ALUMINIUM INDUSTRY

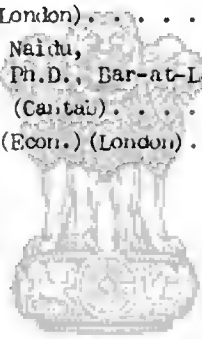
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#### PERSONNEL OF THE BOARD

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Mr. B.N. Adarkar, M.A. (Canta). . . . . *Member.*  
Mr. M.A. Mulky, M.Sc. (Econ.) (London). . . . . *Secretary.*



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(1)

GOVERNMENT OF INDIA  
MINISTRY OF COMMERCE AND INDUSTRY

New Delhi, the 12th July 1951

NOTIFICATION  
(Tariffs)

No. 3(2)-T.B./ 51. - In exercise of the powers conferred by sub-section (1) of section 4 of the Indian Tariff Act, 1934 (XXXII of 1934), the Central Government hereby directs that the existing rate of duty specified in column 3 of the table hereunder printed in respect of the articles mentioned in column 2 shall be reduced to that specified in the corresponding entry in column 4 of the said table:-

THE TABLE

| Item No. of Tariff | Name of articles                                                                                                                                                                        | Existing rate of duty                 | Reduced rate of duty |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|----------------------|
| 66                 | Aluminium manufactures, the following, namely:<br>(a) plates, sheets, circles, strips and foil, including foil in any form or size ordinarily used as parts and fittings of tea-chests. | 30% ad valorem plus Rs. 45/- per ton  | 30% ad valorem       |
| 66(1)              | Aluminium in any crude form, including ingots, bars, blocks, slabs, billets, shots and pellets.                                                                                         | 30% ad valorem plus Rs. 237/- per ton | 30% ad valorem       |

(ii)

GOVERNMENT OF INDIA  
MINISTRY OF COMMERCE & INDUSTRY

*New Delhi, the 12th July, 1951*

RESOLUTION  
(Tariffs)

No. 3(1)-T.B./51/A. - In its first report on the Aluminium Industry, the Indian Tariff Board recommended certain safeguards in connection with the payment of subsidy by Government to producers. The Government of India have given careful consideration to the recommendation of the Board and have decided that, as a general rule, payment of subsidy by the Government of India to a Company shall be subject to the following conditions—

(a) that the Company agrees to have on its Board of Managing Directors a representative of the Government of India as one of the Directors, with the same powers, privileges and functions as any other Director on the Board; and

(b) that the Company agrees to furnish the Government Director with such information in regard to the working of the Company as he may, from time to time, require.

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S.A. VENKATARAMAN,  
Secretary to the Government of India.

GOVERNMENT OF INDIA  
MINISTRY OF COMMERCE AND INDUSTRY

New Delhi, the 12.7.51.

RESOLUTION  
(Tariffs)

No.3(1)-T.B./51.- Protection to the indigenous aluminium industry was granted from the 15th May, 1949, by means of a subsidy cum additional specific duty scheme. Subsequently, representations were received from the industry that the rates of subsidy granted were inadequate. Government did not accept this contention but assured the industry that a review would be undertaken by the Tariff Board after a year's working of the scheme. Accordingly, the Board has made a review and submitted its report. The recommendations of the Board are as follows:-

(1) There is no case for alteration in the rates of duties on aluminium products as fixed under the protection-cum-subsidy scheme of the 15th May, 1949.

(2) On the basis of estimates, no subsidy on sales of sheets and circles is payable to the Indian Aluminium Company for the period from 15th May 1950 to 14th May 1952. If any amount has already been paid to the Company on this account under a provisional arrangement, it should be refunded by the Company.

(3) During the period from 15th May 1950 to 14th May 1951, the rate of subsidy on the sale of ingots payable to the Corporation is Rs. 129.8 per ton. No subsidy is payable

to the Corporation in respect of the period from 15th May 1951 to 14th May 1952. If any amount has already been paid to the Corporation in respect of sales during this period on a provisional basis, the necessary adjustment should be made.

(4) Before paying any subsidy to the Corporation, Government should satisfy themselves that the Corporation has been taking necessary steps to expedite the procurement and installation of its new rolling mills.

(5) If there is a substantial change in the c.i.f. prices of the imported ingots, sheets and circles in future, the question of the amount of subsidy, if any, payable to the Corporation and the Company should be reviewed.

(6) The question of continuing or modifying the scheme of protection should be reviewed early in 1952.

(7) Government should request the Railway Board to consider the possibility of giving facilities for transporting petroleum coke from Digboi to Asansol through the Assam Rail Link.

(8) The Indian Standards Institution should take early steps to finalise the standard specifications for aluminium ingots produced in the country.

(9) The Aluminium Corporation of India should immediately start maintaining a proper system of costing.

(10) The Central Government should request the Travancore-Cochin Government to make necessary arrangements to supply the Indian Aluminium Company with the additional power required for increasing the production of pig aluminium to 2500 tons per annum.

(11) Government should explore the possibility, under the Point Four Programme, of securing the necessary technical advice and assistance for the Aluminium Corporation of India from the U.S.A.



(v)

(12) Government should give high priority to the Corporation for importing the necessary plant and machinery for its rolling mills and for the third boiler.

(13) Government should give facilities to the Company and the Corporation to import plant and machinery as and when required.

(14) All applications for a refund of duty on aluminium products and aluminium alloys that may be required for various consuming industries such as A.C.S.R. cables, foils, pre-fabricated houses, etc., should be examined by Government, and a rebate of duty, if any, should be granted only in such cases and to such extent as may be found to be justified as a result of such examination.

(15) The present concession granted to the Aluminium Industries Ltd., by way of a refund of duty in excess of 30% on aluminium rods for A.C.S.R. cables, should be continued until 14th May 1952.

(16) The existing rate of drawback of duty (7/8 of import duty paid) on exports of aluminium products should continue.

2. Government have accepted all the recommendations with the exception of (1) and (3). As regards recommendation (1), Government do not consider it necessary to continue the additional specific duty on aluminium ingots, sheets and circles, having regard to the increase in the price of imported aluminium, but Government consider that the existing protective duty of 30% *ad valorem* should be continued until the 14th May, 1952.

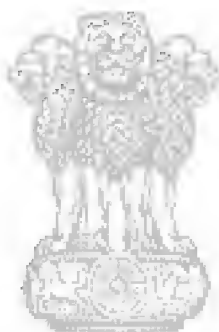
As regards recommendation (3), it has been decided to reduce the rates of subsidy on the sale of ingots payable to the Corporation from Rs. 129.8 per ton, as recommended by the Board, to Rs. 120 per ton, and also to pay it only up to the end of October 1950, for the reason that the price of imported ingots has risen and is progressively rising, with the result that the difference between the selling price of

(vi)

the imported ingots and of indigenous ingots has been reduced, thus eliminating the basis for a subsidy. No subsidy will be payable to the Corporation from the 1st of November 1950.

It is hoped that the aluminium Corporation of India will take steps to implement recommendation (9).

S.A. VENKATARAMAN,  
*Secretary to the Government of India.*



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## CHAPTER I

### INTRODUCTORY

The Government of India, in the Ministry of Commerce letter No. 3(2)-TB/48, dated 19th August, 1949, <sup>Terms of reference.</sup> requested the Tariff Board to undertake, on the expiry of one year from 15th May, 1949, a review of the working of the protective duty-cum-subsidy scheme for the aluminium industry and report to Government. This reference was made as a result of the representations submitted to Government by (1) The Indian Aluminium Company Ltd., Calcutta, in its letter dated 20th June, 1949, and (2) The Aluminium Corporation of India Ltd., Calcutta, in its letter No. 2817 dated 23rd/24th June, 1949, for a re-examination of the protective duty-cum-subsidy scheme for the aluminium industry detailed in the Ministry of Commerce Resolution No. 3(3)-TB/48 dated 15th May, 1949.

2. The case for protection or assistance to the aluminium industry was first referred to the Board by <sup>Previous inquiry by the Board.</sup> the Ministry of Commerce Resolution No. 218-T(55)/45 dated 16th February, 1946. The Board, after necessary investigations, submitted its Report on 20th June, 1946. The Board came to the conclusion that the industry deserved protection and considered that

"the problem of protecting the industry has to be met by a system of protective duty on imports on the one hand and subsidy to the home producer on the other."

The Board recommended:

"the scheme of protective duty-cum-subsidy should be based on the selling price to the consumer of Rs. 1,600 per ton of ingot for the period ending March, 1949. This price should be fixed as the maximum selling price. The maximum selling price for sheets and circles should be fixed at Rs. 2,450 per ton equal to the then lowest landed cost;

"a specific duty of Rs. 590 per ton should be levied on imports of aluminium ingot into the country for the period ending 31st March, 1949. If the landed cost ex-duty of imported ingot falls below Rs. 980 per ton, action should be taken under Section 4(1) of the Indian Tariff Act, 1934, to raise the duty so as to maintain the measure of protection recommended by us. There should be no modification in the selling price recommended during the period of protection;

"a specific duty of Rs. 590 per ton should be levied on aluminium sheets and circles for the period ending March, 31, 1949. Should the landed cost ex-duty fall below Rs. 1,880 per ton, the amount of duty should be raised so as to bring up the total landed cost including duty to Rs. 2,450 per ton thereby to maintain the measure of protection recommended;

"a subsidy should be paid to the Aluminium Corporation of India and, if so decided by Government, to the Indian Aluminium Company, equal to the difference between their fair selling price or cost of production including profit and the selling price recommended by us. On this basis, the Company should be paid a subsidy of Rs. 817 per ton during the six months October to March, 1946-47, Rs. 586 per ton in 1947-48 and Rs. 300 per ton in 1948-49. The Corporation should be paid a subsidy of Rs. 848, Rs. 576 and Rs. 268 per ton respectively during the three periods. The subsidy should be paid on the actual production."

The Board made also a few other recommendations to ensure the development of the industry on a sound basis.

3. Government, after careful consideration of the Board's recommendations, came to the conclusion, in their Resolution No. 218-T(28)/47 dated 22nd March, 1947, that the Board's Report raised various issues of great importance and that a further technical examination was necessary. Government accordingly appointed an Official Committee consisting of representatives of the Ministries of Industry and Supply, Commerce, Finance and the Cabinet Secretariat. In the light of the findings of the Official Committee, Government re-examined the recommendations of the Board, and, in consultation with the Board, decided to grant protection to the aluminium industry

Government action  
on the Board's  
recommendations.

on the lines set out in their Resolution No. 3(3)-TB/18 dated 15th May, 1949. A copy of the Resolution is given in Appendix I. It will be seen from the Resolution that Government accepted the protective duty-cum-subsidy scheme in a modified form, after taking into consideration the variations in costs of production and landed costs of imports that had taken place subsequently to the submission of the Board's Report in 1946. The rates of subsidies that were decided upon, were as follows:-

| Year    | Rate of subsidy in rupees per ton |                           |                 |
|---------|-----------------------------------|---------------------------|-----------------|
|         | The Aluminium Company             | Aluminium Corporation     |                 |
| 1949-50 | 330 (on sheets & circles)         | 710 (on sheets & circles) | 900 (on ingots) |
| 1950-51 | 230 ( Do. )                       | 610 ( Do. )               | 825 ( Do. )     |
| 1951-52 | 130 ( Do. )                       | 510 ( Do. )               | 750 ( Do. )     |

The scheme involved the continued levy of import duty at 30 per cent. *ad valorem* and the levy, in addition, of specific duties at the following rates.

| Year    | Rate of additional duty on ingots in rupees per ton | Rate of additional duty on sheets, strips and circles in rupees per ton |
|---------|-----------------------------------------------------|-------------------------------------------------------------------------|
| 1949-50 | 328                                                 | 121                                                                     |
| 1950-51 | 237                                                 | 46                                                                      |
| 1951-52 | 146                                                 | Nil                                                                     |

These rates of duty and subsidy were based on the then current landed cost, ex-duty, of Rs. 1,275 per ton of aluminium ingot and of Rs. 2,614 per ton of 20 gauge circles and were liable to suitable adjustments if the c.i.f. prices and landed costs varied appreciably. Appendix II gives the other recommendations of the Board and the steps taken by Government to implement them. It may be pointed out that with effect from May 15, 1950, the subsidy is being paid on a provisional basis, pending the final decision after consideration of the recommendations of the Board, at



Rs. 150 per ton of ingot and at Rs. 160 per ton of sheets and circles produced and sold by the Corporation; and at Rs. 115 per ton on sheets and circles produced and sold by the Company.

4. Immediately after the announcement of the Government decision on the scheme of protection-cum-subsidy for the aluminium industry in their Resolution dated 15th May, 1949, the Indian Aluminium Company and the Aluminium Corporation of India submitted representations to Government to the effect that the scheme was unsatisfactory and that the rates of subsidy provided in the scheme were inadequate. Government, after carefully considering these representations, came to the conclusion that the rates of subsidy sanctioned by Government were reasonable, but, at the same time, Government gave an assurance to the two firms that a review would be made by the Tariff Board after a year's working of the scheme. In the course of the Parliamentary debates, held in December, 1949, on the Tariff Act Amendment Bill, in connection with the proposal to levy protective duties on aluminium, the Hon'ble Minister for Commerce repeated the same assurance. It is in pursuance of that assurance that the present inquiry has been undertaken. Viewed in the context of the genesis of this inquiry, its object will be (a) to estimate the fair selling prices of aluminium ingots and sheets and circles produced by the Company and the Corporation during the period from 15th May, 1950 to 14th May, 1952; (b) to ascertain the c.i.f. prices and landed costs of the imported articles; (c) on the basis of a comparison between the fair selling prices and the landed costs, to determine the quantum of protection, if any, required for the articles manufactured by the two firms during the period in question; and (d) to consider the best method of affording such protection. The Board will also have to consider what steps should be taken by the two firms to reduce the cost of production. It will also be necessary for the Board to examine whether any concession in respect of duties should be granted to certain industries which use, as their principal

material, such special types of virgin aluminium or alloys of alluminium as are not at present produced in the country.

5. The Board issued a press communique on 5th May, 1950, announcing that special questionnaires for Method of inquiry. producers, importers and consumers were ready for issue and inviting parties interested in the industry or in the use of its products and Associations who wished their views to be considered, to obtain such questionnaires from the Board. The Directors of Industries, Chambers of Commerce and Trade Associations were also requested to forward their views on the protective-duty-cum-subsidy scheme. The Indian Trade Commissioners in the principal foreign countries were requested to furnish information on the present position of the industry in the different countries within their jurisdiction. On 22nd August, 1950, the Board issued a special questionnaire to the producers of the subsidiary products of aluminium, such as utensils, foils, etc. The data regarding the c.i.f. prices and landed costs were obtained from the Collectors of Customs and the leading importers. The Directorate-General of Industries and Supplies furnished two memoranda on the various aspects of the industry. A list of firms and bodies to whom the Board's special questionnaires were issued, and indicating those who replied or submitted memoranda, is given in Appendix III. Shri N. Krishnan, Cost Accounts Officer attached to the Board, and Shri R.N. Kapur, Honorary Technical Adviser to the Board for this inquiry, visited the works of the Company and the Corporation and examined the costs in detail. A list of the different works which they visited and the dates of visits are given in Appendix IV.

6. At the request of the Board, the Chairman, Central Electricity Commission, was good enough to depute one of its officers to the works of the Corporation to examine its boiler capacity and efficiency at the works. The officer submitted a report to the Board on his findings.

7. Dr. H.L. Dey, President, and Dr. B.V. Narayanaswamy Naidu, Member of the Board, accompanied by Shri R.N. Kapur, Technical Adviser to the Board, and Shri N. Krishnan, Cost Accounts Officer, visited the reduction works of the Indian Aluminium Company at Alupuram in Travancore-Cochin on 26th September, 1950. Dr. H.L. Dey, President, Dr.B.V. Narayanaswamy Naidu and Shri B.N. Adarkar, Members of the Board, together visited the works of the Indian Aluminium Company at Calcutta and Muri on the 7th and 9th of October, 1950, respectively. It may be mentioned that at the Muri Works, they received a representative of the Labour Union and informally discussed the labour condition at the works. They also visited the works of the Corporation at Jaykaynagar, Asansol, on 10th October, 1950. Besides, they visited the works at Jeewanlal (1929) Ltd. at Belur (engaged in the manufacture of utensils) on 7th October, 1950, and the factory of Venesta Limited, Calcutta (engaged in the manufacture of aluminium foils) on 11th October, 1950.

8. A public inquiry was held on 17th October, 1950. A list of firms or Associations which sent representatives to attend the public inquiry is given in Appendix V. The Board also held discussions with representatives of the Company and the Corporation separately on their costs of production on 18th and 19th October, 1950. At the request of the firms, these discussions were held *in camera*. At the invitation of the Board, Shri Manu Subedar met the Board on 24th October, 1950, and elucidated his views on the scheme of protection-cum-subsidy for the aluminium industry.

## CHAPTER II

## THE PRESENT POSITION OF THE INDIAN ALUMINIUM INDUSTRY

9. Within the period of three or four decades, aluminium has come to the forefront as an important metal. <sup>Importance of the industry.</sup> On account of its remarkable properties, such as lightness, high thermal and electrical conductivity and resistance to corrosion, the uses of aluminium are daily growing in number and importance. Its most important and largest use today is in the building of air-craft. It is also being increasingly used in the manufacture of domestic utensils, railway carriages, motor cars, furniture, and storage receptacles for liquids. Aluminium cables are replacing copper conductors in electric transmission lines in many cases. Aluminium is also used as powder or paste, in the paint industry. Aluminium foil is rapidly replacing lead foil as a wrapping and packing material for tea, chocolates, cigarettes and other articles. Aluminium sheets can also be used for thermal insulation of houses, locomotive boilers, air-conditioned trains, etc. A large quantity of aluminium is being used for portable or semi-portable buildings, e.g., prefabricated houses, for structural fittings in buildings and for machinery in cases where movement is an essential factor. Aluminium can be anodised and dyed so as to give attractive decorative colours. Since aluminium resists the action of various chemicals and gases, it is being extensively used in the equipment needed in oil furnaces, breweries, etc.

10. It is interesting to note that the world production of aluminium which was 697,143 tons in 1939 increased rapidly during the early period of the war and reached the peak of 1,952,000 tons in 1943. During this period, the largest

increase in production took place in the U.S.A. and Canada, the increase being from 148,357 tons to 831,768 tons in the U.S.A. and from 75,152 tons to 449,734 tons in Canada. During the next three years, however, the world's production of the metal decreased by 1,160,000 tons to 792,000 tons. During 1947 and 1948 it went up again. The total world production in 1948 was 1,235,000 tons of which the U.S.A. produced 535,587 tons or about 45 per cent., Canada 333,007 tons or about 27 per cent. and the U.S.S.R. 140,000 tons or about 11 per cent. The U.S.A. and Canada between them produced 72 per cent. of the total world output in 1948. Statistics of production of aluminium in different countries in recent years will be found in a statement given in Appendix VI.

11. From what has been stated above, it will be evident that aluminium must be regarded as a key metal, indispensable for defence and extremely valuable for a large variety of domestic and industrial uses. The development of the aluminium industry is all the more important for India, because, while her natural resources for the production of other non-ferrous metals, such as copper and lead, are limited and those for tin and zinc are non-existent, she has very extensive deposits of bauxite, the principal ore for the production of aluminium, in several widely separated parts of the country, such as Bihar, Madhya Pradesh, Bombay, Madras, Madhya Bharat and Jammu and Kashmir. In this connection, it may be mentioned that of the total world reserves of bauxite estimated at about 900 million tons, the reserves in India are estimated at about 60 million tons. When the various multi-purpose projects are completed large blocks of comparatively cheap hydro-electric power will be available for operating aluminium reduction plants in several parts of the country. The development of an electro-metallurgical industry, like aluminium, providing a continuous load, is a useful complement to any scheme involving generation of hydro-electric energy on a large scale. In view of these considerations, Government have

recognised the importance of establishing the industry in this country and have given active encouragement to it from the very start. Government gave assistance to the Aluminium Corporation of India to obtain several essential parts of its plant at Jaykaynagar, West Bengal, and to the Indian Aluminium Company to put up its smelter works at Alwaye, Travancore-Cochin. Government also gave priorities to both the firms for the supply of structural steel for the construction of factory buildings as well as for the supply of machine tools for maintenance; an officer of the organisation of the Electrical Commissioner was deputed to advise and assist the Corporation during the installation of its boiler house and power plant; and Government brought out experts from Canada to help the Corporation and get its aluminium plant running properly and efficiently. Again, in the initial period of the production of aluminium in this country, the position of the indigenous industry was fully safeguarded by instituting a "Pool" arrangement which continued from 31st January, 1945 to 14th May, 1949. With effect from 15th May, 1949, the "Pool" was replaced by a system of protective duties and subsidies. Besides, as will be shown in detail in Chapter III, the industry as a whole has also derived substantial benefit from various measures of import control at different periods.

12. There are five distinct stages in the production stages of production. of aluminium, namely,

- (a) mining of bauxite;
- (b) production of alumina;
- (c) production of pig aluminium;
- (d) fabrication of aluminium into sheets, circles, etc; and
- (e) production of finished articles.

Of these, the manufacture of domestic utensils is a well established industry in the country. The fabrication of aluminium into sheets and circles, that is, the fourth stage, is also carried on extensively. The production of

alumina and aluminium out of indigenous bauxite is at present done by only two firms, viz., the Indian Aluminium Company, Ltd. and the Aluminium Corporation of India Ltd.

13. The raw materials required for the production of Raw materials. alumina and aluminium ingots are as follows:-

(a) For alumina:

Bauxite;  
Caustic soda;  
Lime;  
Coal and fuel oil for steam and calcination; and  
Filter cloth for filtration.

(b) For aluminium:

Alumina;  
Electricity;  
Petroleum coke and pitch;  
Cryolite, fluoride and fluorspar;  
Hard coke and tar.

14. At the time of the last Tariff inquiry, the Aluminium Corporation was producing alumina from Indian bauxite from its mines in Bihar while the Aluminium Company was smelting aluminium from imported alumina. Cryolite, fluoride and fluorspar were and are still imported by both the companies as these materials are not available in India. Since then, the Indian Aluminium Company has started manufacturing alumina at Muri from indigenous bauxite mined at Lohardaga in Bihar. The Corporation was generating its own thermal power while the Company was receiving power from the Palli-vassal hydro-electric works in Travancore State. The position as regards power supply has since then not at all improved. On the contrary, there has been a slight deterioration in the supply of power available to the Company's smelting works at Alwaye. The drought conditions in South-West India have necessitated seasonal cuts with the result that the Company has not been able to reach its rated capacity of 2,500 tons in any year.

15. Bauxite is abundantly available in India. It has been stated that although the bauxite deposits in India are widespread, only a few are today close enough to power projects to be of practical use to the aluminium industry. The following are the principal deposits:-

- (1) *Bombay State*: Tungar Hill (close to Tata Hydro-electric Power Lines), Matheran, Kapadvanj (north of Baroda), Kolhapur State and Belgaum (close to Mysore and Travancore grids and Marmagoa port).
- (2) *Madhya Pradesh*: Katni-Jubbulpore and Bihar - extending eastward through Rewa towards Bihar State.
- (3) *Rewa State*: Amarkantak Plateau and Sergo Hill.
- (4) *Bihar State*: Lohardaga Group.
- (5) *Kashmir*: Chakhar (near Jammu).

16. The total reserves of good bauxite in India are estimated at more than 20 million tons and this will suffice to maintain an industry producing 50,000 tons of aluminium per year, for about 100 years. The mining of bauxite is simple in as much as it occurs mostly as surface deposits frequently capping a plateau. Although locally overlain by iron laterites, as a rule, there is little or no overburden except a few feet of sandy clay soil or humus. Indian bauxite, however, presents certain chemical peculiarities which are not generally found in bauxites elsewhere in the world. In North and South America, nearly all bauxites are trihydrates, i.e., they have three molecules of water to one molecule of alumina. In Europe, practically all bauxite is of the monohydrate type, generally high in iron oxide. In Africa and the East Indies, the bauxite is of the trihydrate type similar to that in America. In India, unhappily, there is no uniformity in this respect. Although Indian bauxite is mainly of the trihydrate type, varying amounts of monohydrates are often found mixed with the trihydrate. This lack of uniformity applies to most of the constituents of the Indian bauxite, such as water and iron oxide (which



varies from 2 per cent. to 30 per cent.), titania (which varies from 1.5 per cent. to 12 per cent.), silicon, etc., which also show a wide variation. Consequently, in comparison with American deposits, Indian bauxite requires finer grinding, a better and more concentrated caustic soda solution to dissolve it, and three times more filtering capacity per unit of alumina. As the aluminium content of Indian bauxite is also less, the consumption of bauxite per unit of aluminium is 25 per cent. higher in India than in Canada or the U.S.A. As a result of these deficiencies, Indian bauxite requires costlier process for its treatment and this results in higher production costs than those in Canada, the U.S.A. or even the European countries.

17. Electric power is another of the essential requisites of this industry. Normally, about 10 units of electrical energy are required for each pound of aluminium. An aluminium plant must, therefore, obtain large blocks of electrical power, and it is essential that such power should be available at a very low cost. Power in India cannot be produced at costs comparable to those in America or Europe, since the very high costs of equipment, all of which has to be imported, impose a burden which is not adequately compensated by any special advantage. We, however, understand that the possibility of installing new aluminium plants at the sites of the Hirakud and Damodar Valley projects is being considered by Government as well as by the aluminium manufacturers.

18. Considerable difficulty has been experienced by the Indian Aluminium Company in importing Canadian 'Thoratex' filter cloth which lasts much longer than the locally available substitutes. On account of the short life of the local cloth, there are frequent interruptions for replacement with consequent loss of production.

19. The Aluminium Corporation is using imported carbon blocks for pot lining whereas the Company is using a pot-

lining mix which it prepares locally from indigenous raw materials and which has been found to give satisfactory service. The Corporation has not been able to develop the technique of building pot lining from local raw materials.

20. Petroleum coke is obtained from Digboi Oil fields in Assam. The Corporation has got a plant for calcining petroleum coke for the Soderberg paste required for making electrodes and also for pot-lining. The Company has no such plant and its experiment in calcining petroleum coke at its Muri Works did not prove successful. The Company obtained supplies of calcined petroleum coke from the Corporation but these were discontinued later. We discussed the matter with the representatives of the Corporation and have been informed that, although the Corporation had to discontinue the supply of calcined petroleum coke to the Company for a period owing to interruptions in the transport of coke from Digboi, the position has improved and that consequently the Corporation is now in a position to resume the supply of calcined coke to the Company at a reasonable price.

21. For some time after partition the petroleum coke from Digboi had necessarily to pass through Pakistan. With the establishment of the Assam rail link, direct transport has now become possible, but we have been informed that the new Assam Rail Link Committee has imposed restrictions on the movement of petroleum coke and has suggested the use of the river route instead. Since the freight and expenses of transport through the river route are about four times those by rail and since, in the case of the river route, the material has to pass through Pakistan territory involving delays and inconveniences, we consider it desirable that the Corporation should be given sufficient facilities for transporting this material from Digboi to Asansol through the Assam rail link. We recommend that the matter should be referred to the Railway Board for favourable consideration.

22. A brief description of the process of manufacture of aluminium has been given on pages 7 and 8 of the Process of manufacture.

Board's previous Report on the aluminium industry (1946). For convenience of reference, it is reproduced below:

"The production of aluminium is divided into two main stages. The first stage involves the production of alumina or aluminium oxide from bauxite which is the basic ore of aluminium. The second stage involves the electrolysis of alumina in a liquid bath of cryolite and other salts.

*Production of alumina:* The most widely used process for the production of alumina is known as the Bayer process. In this, bauxite is calcined in a rotary kiln and then ground in a ball mill. Next it is mixed with a strong solution of caustic soda and digested under pressure in steam jacketed autoclaves. This converts aluminium oxide into sodium aluminate. The latter is filtered to remove impurities and aluminium hydroxide is precipitated by further treatment. The precipitated aluminium hydroxide is dried and calcined in a reverberatory furnace to produce alumina.

*Production of aluminium ingot:* This operation is carried out in large electrolytic cells which consist of steel shells lined with carbon blocks forming an inner cavity in which the molten cryolite and alumina are held. The carbon anodes, called Soderberg anodes, dipping into electrolyte introduce the current which provides the heat to keep the bath liquid and separates the metallic aluminium electrolytically. Molten aluminium deposits at the bottom of the cell and is withdrawn from time to time into a ladle and cast into ingots. This is the primary aluminium of commerce and generally runs in purity up to about 99.8 per cent., depending upon the care and skill of operation as well as upon the purity of the raw materials used, especially alumina and Soderberg electrodes.

The carbon lining of the electrolytic cell known as pot-lining requires removal after a run of about 400/450 days. The life of the lining depends on the nature of lining material and the skill of operation.

*Rolling:* The ingots produced at the reduction works are sent to a rolling mill where they are rolled into sheets and circles or to an aluminium factory where they are subjected to mechanical processes, such as forging, extrusion, drawing, spinning, etc.

*Hollow-ware industry:* Sheets and circles produced at rolling mills are sent to utensil making plants where they are moulded into various shapes and sizes of utensils and hollow-ware."

23. *Organizational set-up:* The Indian Aluminium Company was started in 1938 as a private limited company under the name of Aluminium Production Company of India, Ltd. The Company's capital was equally shared by Aluminium Limited, Canada, and the British Aluminium Company, Ltd., U.K. In June, 1944, the Company was converted into a public limited company, under its present name, The Indian Aluminium Company, Ltd. The share capital of the Company is Rs. 200 lakhs fully paid-up which is made up of 1,60,000 ordinary shares of Rs. 100 each and 40,000 5 per cent. cumulative preference shares of Rs. 100 each. All the preference shares and 20,000 ordinary shares are held by Indian nationals, the value of shares held by them amounting to Rs. 60 lakhs or 30 per cent. of the total. The remaining share capital valued at Rs. 140 lakhs was originally held in equal proportion by Aluminium Limited and the British Aluminium Company Limited. Recently, Aluminium Limited has purchased the shares formerly held by the British Aluminium Company, so that now Aluminium Limited holds share capital to the value of Rs. 140 lakhs, or 70 per cent. of the total. Of this 70 per cent., 66.16 per cent. is held directly by Aluminium Limited and 3.84 per cent. by Jeewanlal (1929) Limited on behalf of Aluminium Limited.

24. Aluminium Limited is a holding or investing Company which has 42 fully-owned or controlled subsidiaries in 18 different countries of the world. The geographical distribution of its fully-owned facilities and investments in associated Companies is as follows:-

|                            |     |     |     |     |     |     |
|----------------------------|-----|-----|-----|-----|-----|-----|
| Canada                     | ... | ... | ... | ... | ... | 84% |
| Other Western Hemisphere   | ... | ... | ... | ... | ... | 6%  |
| Other British Commonwealth | ... | ... | ... | ... | ... | 7%  |
| All others                 | ... | ... | ... | ... | ... | 3%  |

The principal activities of the Aluminium Limited group are mining, shipping and transport of bauxite, generation of hydro-electric power, production of primary aluminium metal through chemical and electrolytic processes and fabrication of some of the aluminium into forms useful to the metal trade. The principal commodities produced and sold are aluminium ingots and semi-finished products, including rolled sheets, strips and plates, rolled bars and rods, wires and cables, extruded shapes, tubular goods, and castings and forgings. To a lesser extent, the Company produces and sells aluminium cooking utensils, aluminium foil, paste and powder, and other consumer articles. The Company also produces and sells heavy industrial chemicals. The Company's enterprises relating to semi-fabricated products have been extended to Canada, the U.K., India, South Africa, Brazil, Mexico, Switzerland, Holland, Norway and Sweden. Aluminium Limited has set up a number of specialised subsidiaries on a functional basis, such as Aluminium Securities Limited to look after financial problems, Aluminium Union Limited for sales and Aluminium Laboratories Limited to deal with technical problems.

25. As indicated above, the Indian Aluminium Company is a subsidiary of Aluminium Limited. The Directors of the Indian Aluminium Company are elected by the shareholders at their Annual General Meeting. Since Aluminium Limited holds 70 per cent. of the share capital, it can play a predominant part in the election of the Directors. We have, however, been informed that, in practice, the Directors of the Indian Aluminium Company have been given a large measure of autonomy in the management of its affairs. At the present time, out of eight Directors, six, including the Chairman, are nationals of the country. The General Manager is a nominee of Aluminium Limited, but after his appointment, he is responsible to the Board of Directors of the Indian Aluminium Company. The Indian Aluminium Company has entered into formal contracts with two of the specialised agencies of Aluminium Limited, viz. (i) Aluminium Laboratories

Limited for purposes of technical advice and assistance, on a retainer fee of 15,000 Canadian Dollars per annum and (ii) Aluminium Securities Limited for advice and assistance in respect of finance, accounting and auditing, on a fee of 1,200 Canadian Dollars per annum.

26. Since 1945, the Company has adopted a policy of training Indian technicians in various branches of the industry. So far, six Indians have been trained in Canada. Whereas in 1946 there were ten non-Indians on the staff of the Company, there are now only three non-Indians on the Company's staff, viz., The General Manager, the Secretary and the Chief Engineer. At the present time, the management of its mines and all its three factories has been assigned to Indian nationals. Besides, the posts of Sales Manager, Purchasing Officer, Chief Cost Accountant and Accountant are held by Indians. The Company has also built modern colonies for its staff at Alwaye and Muri, and on a small scale, at Lohardaga.

27. Jeewanlal (1929) Limited, Calcutta, who is the largest manufacturer of aluminium utensils in the country, is a fully-owned subsidiary of Aluminium Limited. As stated earlier, Jeewanlal (1929) Limited holds 3.84 per cent. of the share capital of the Indian Aluminium Company, on behalf of Aluminium Limited. Three Directors are common to the Indian Aluminium Company and to Jeewanlal (1929) Limited. The Indian Aluminium Company sells the major part of its production of sheets and circles to Jeewanlal (1929) Limited. The Indian Aluminium Company has stated that the business relationship between itself and Jeewanlal (1929) Limited is purely one of supplier and customer and that no special considerations or concessions are made either way. Even so, it is necessary to point out that both the Companies being subsidiaries to Aluminium Limited, they are organically and financially inter-connected so that all the profits of Jeewanlal (1929) Limited and 70 per cent. of the profits of the Indian Aluminium Company belong to the same group of shareholders, viz., Aluminium Limited, Canada.

28. The Indian Aluminium Company commenced its operations in 1911 with the fabrication of imported aluminium ingots into sheets and circles at its Belur works. In 1943, the Company started the production of aluminium from imported alumina at its reduction works at Alwaye, Travancore-Cochin. The Company's plant for the production of alumina from indigenous bauxite was started in 1948 at Muri in Bihar.

29. The Company owns five leases for mining bauxite. Four of them are situated in Ranchi district, Bihar, and the fifth one is in Belgaum district, Bombay. The estimated reserves of ore in all the mines taken together come to about 85 lakh tons. The Company is at present working only two mines in the Bagru Hills, Ranchi. These mines are four miles from Lohardaga, the nearest railway station. Formerly, the bauxite ore was being transported from Bagru Hills to Lohardaga station by means of motor lorries. Recently, however, the Company has installed an aerial ropeway to transport bauxite from the hills to Lohardaga. The length of the ropeway is about six miles. Although the ropeway is said to have a capacity to transport about 40,000 tons of bauxite per annum, a little over one-quarter of this capacity is at present utilised since the quantity of bauxite required at the alumina works does not exceed 11,000 tons.

30. The Company's alumina works are located at Muri, 78 miles from Lohardaga railway station. The plant was originally designed for a production of 10,000 tons of alumina. The installed capacity at present is about 6,500 tons and can be increased to 10,000 tons with a small additional investment. The actual production is restricted to about 5,000 tons as the demand for alumina for the reduction works at Alwaye is only that much at present.

31. The Company's reduction works are located at Alwaye, 1,520 miles from Muri. The rated capacity of the plant is 2,500 tons per annum. The Company has plans to expand production at Alwaye to 5,000 tons of aluminium when the necessary power is available. It has, however,

been pointed out by the Company that it is experiencing difficulties in securing the necessary supply of power even for its present level of production. It may be mentioned that if adequate power supply could be made available at Alwaye and production of aluminium stepped up to 5,000 tons, the alumina works at Muri could also be extended for a production of 10,000 tons of alumina, which would result in a substantial reduction in the costs of production of aluminium. The estimated cost for the extension programme, as given by the Company, is about Rs. 24 lakhs for the Muri plant and Rs. 70 lakhs for the reduction works at Alwaye. These extension projects are not likely to materialise within the next two years owing to lack of power supply.

32. The Company has got an up-to-date rolling mill at Belur near Calcutta, 1,445 miles from Alwaye. The potential capacity of the mill is 3,000 tons. The pig aluminium produced at Alwaye is fabricated at the Belur works. The Company is also fabricating small quantities of imported pig aluminium. In 1948-49, the Company produced 4,360 tons of aluminium hydrate, 2,347 tons of pig aluminium and 2,284 tons of sheets and circles.

33. *Special advantages and disadvantages of the Company:* As pointed out earlier, the Company is a subsidiary of Aluminium Limited, one of the largest manufacturers of aluminium in the world, having considerable financial and technical resources and experience of aluminium production in different parts of the world. This by itself is a great advantage to the Company. On the other hand, the Company is subject to certain special disadvantages. As has been pointed out earlier, the Company's alumina works are located at Muri in Bihar, the reduction works at Alwaye in Travancore-Cochin, and the rolling mill at Belur, near Calcutta, with the result that it has to incur heavy freight charges for the transport of alumina and aluminium. The freight charges on alumina from Muri to Alwaye come to Rs. 169.49 per ton of aluminium, and those on aluminium from Alwaye to Belur



to Rs. 99.6 per ton. The location of the works at widely separated parts of the country was due to circumstances beyond the control of the Company. The Company installed its rolling mills near Calcutta, because that is the biggest market for sheets and circles. The reduction plant was located at Alwaye at the instance of Government to meet war-time demand, the primary consideration for the selection of Alwaye for this purpose being the availability of sufficient power at a comparatively low rate. The alumina works was set up in Muri because of its comparative nearness to the bauxite mines. The fact, however, remains that the Company has to bear considerable freight charges and incur large overhead costs on account of the component units being located at three different places. This disadvantage is partially offset by the comparatively low rate at which power is available at Alwaye. The Company's present disadvantages would be reduced to some extent if it could increase its production of pig aluminium at Alwaye to 5,000 tons as originally planned, with a consequent increase in the production of alumina at Muri to 10,000 tons and in the raising of bauxite at Bagru Hills to 25,000 tons. The Company has stated that if this extension programme could be carried out, the cost of ingot would be reduced by about Rs. 400 per ton. The extension scheme for the Alwaye works has been held up because the Travancore-Cochin Government is not in a position to supply extra power till their Chengulam project is completed. Further reduction in costs may be possible when large blocks of power are available from Hirakud or the Damodar project for a new reduction plant with a capacity for 15,000 or 20,000 tons of aluminium which the Company is proposing to set up.

34. *Financial position of the Company:* The Company has been making profits since 1944-45. The amount of profits earned in 1948-49 was, however, only nominal. The total profits made during the financial years from 1944-45 to 1948-49 were Rs. 65.11 lakhs, which include Rs. 2.09 lakhs transferred at the time of the conversion of the Company

into a public limited company. The figures of profits made in each year are given below:-

|                                             | (in lakhs of rupees) |
|---------------------------------------------|----------------------|
| Profits prior to 1st October, 1944. . . . . | 2.09                 |
| 1944-45. . . . .                            | 14.36                |
| 1945-46 . . . . .                           | 15.83                |
| 1946-47. . . . .                            | 18.26                |
| 1947-48 . . . . .                           | 13.85                |
| 1948-49. . . . .                            | 0.72                 |
| Total. . . . .                              | <u>65.11</u>         |

Appropriation of the above profits has been made as under:-

|                                             | (in lakhs of rupees) |
|---------------------------------------------|----------------------|
| Dividends on cumulative preference shares . | 6.07                 |
| General Reserve. . . . .                    | 1.15                 |
| Provision for taxation. . . . .             | 38.50                |
| Liabilities for other finance. . . . .      | 1.25                 |
| Balance . . . . .                           | 18.14                |
| Total. . . . .                              | <u>65.11</u>         |

The Company has paid dividends on cumulative preference shares up to 30th September, 1949. No dividend has, however, been declared on ordinary shares since the Company was converted into a public limited company.

35. *Organizational set-up:* The Aluminium Corporation of India was formed in 1937 as a public limited company with Messrs. Nirmal Kumar Jain and Co. as Managing Agents. The Corporation started with a capital of Rs. 50 lakhs. Orders for plant and machinery were placed with Messrs. Skoda Works and with certain German firms. Before the full complement of plant and machinery arrived in India, the war broke out and the activities of the Corporation came to a standstill. In 1940, the Roger Mission, which visited the country, strongly recommended that priority should be given to the Corporation to import the remaining machinery required for the production of aluminium. The Corporation's financial position was not,

however, satisfactory at the time. A new managing agency company known as J.K. Ltd. was formed and this Company purchased a major part of the shares of the Nirmal Kumar Jain and Co. The managing agents are entitled to a commission at the rate of  $8\frac{1}{2}$  per cent. on profits after deducting depreciation. But they have foregone this commission until now. They are also entitled to receive a fixed office allowance at the rate of Rs. 2,500 per month. Actually, they had received office allowance at the rate of Rs. 1,000 per month up to 1947. From 1948 onwards, no allowance has been received.

36. With the transfer of the managing agency to J.K. Ltd., the Corporation renewed its activities and was able to produce alumina in 1942 on an experimental scale. The Corporation started producing aluminium on a regular basis from 1944. The Corporation was the first Company to produce alumina from Indian bauxite and manufacture aluminium from the indigenous alumina.

37. The Corporation raised its authorized capital to Rs. 150 lakhs in 1944. The present paid-up capital of the Corporation is constituted as follows:-

|                                                                             | (In lakhs of rupees) |
|-----------------------------------------------------------------------------|----------------------|
| 20,000, 6% cumulative preference shares of Rs. 100 each. . . . .            | 20.00                |
| 20,000, 5% cumulative redeemable preference shares of Rs. 100 each. . . . . | 20.00                |
| 4,75,000 ordinary shares of Rs. 10 each . . . . .                           | 47.50                |
| 1,00,000 deferred shares of Rs. 2/8 each. . . . .                           | 2.50                 |
| Total. . . . .                                                              | <u>90.00</u>         |

The Corporation has also issued mortgage debentures for Rs. 25 lakhs as under:-

|                                                   | (In lakhs of rupees) |
|---------------------------------------------------|----------------------|
| 1,500, 5½% bearer bonds of Rs. 1,000 each . . . . | 15.00                |
| 1,000, 5% bonds of Rs. 1,000 each . . . . .       | 10.00                |
| Total. .                                          | <u>25.00</u>         |

We have been informed that three members of the J.K. family hold shares worth Rs. 45 lakhs and the entire block of debentures worth Rs. 25 lakhs.

38. The Corporation has secured eight leases for mining bauxite. Of these, seven are in Ranchi district, Bihar, and the remaining one is at Unchera, Madhya Pradesh. The estimated reserves of ore in all the mines taken together come to about one million tons. The Corporation is at present working its mines in Bagru (Saraogi's property), Khamar, Pakhar and Champi. These mines are within a radius of about 20 miles from Lohardaga railway station. The bauxite from Bagru and Champi mines is sent to Lohardaga railway station and the bauxite from Khamar and Pakhar is sent to Tori railway station, which is nearer to these mines than Lohardaga. It is stated that the quality of bauxite in different mines is not uniform.

39. Unlike the Company, the Corporation has advantage of all its units of production being located together at Jaykaynagar, seven miles from Asansol. One of the reasons for the choice of the site is its nearness to the Corporation's colliery, as the Corporation is generating its own power. The Corporation has its own coal mine, a thermal power plant, an alumina plant, a reduction plant, a petroleum coke calcining unit, a sheet rolling mill, and a utensil manufacturing section. The Corporation has built up an extensive modern colony for its employees at Jaykaynagar and has on hand plans for its further expansion.

40. The capacity of the alumina plant is estimated at 5,000 tons and that of the reduction plant at 1,500 tons of aluminium. The highest production so far attained was in 1946-47, when it produced 3,027 tons of alumina and 1,512 tons of aluminium. Since then, there has been a decrease in production. In 1949-50, the Corporation produced 2,764 tons of alumina and 1,272 tons of aluminium. The rolling mill has a capacity of 450 tons. The utensil manufacturing section has not been successful and its activities have been stopped since September, 1950. The Corporation has plans to increase ingot production to 2,000 tons and also to install a larger rolling mill. The Corporation has recently secured a loan of Rs. 50 lakhs from the Industrial Finance Corporation, which will be utilised for installing a modern rolling mill and a third boiler.

41. *Financial position:* The total profits made by the Corporation from its incorporation upto 31st March, 1950, amount to Rs. 47.28 lakhs, inclusive of Rs. 13.59 lakhs received as selling agents' commission from Messrs. Raymond Woollen Mills, Ltd. The details are given below:-

|         |     |     |     |     | ( In lakhs of<br>rupees ) |
|---------|-----|-----|-----|-----|---------------------------|
| 1944-45 | ... | ... | ... | ... | (-) 0.67 (loss)           |
| 1945-46 | ... | ... | ... | ... | 6.81 (profit)             |
| 1946-47 | ... | ... | ... | ... | 8.07 "                    |
| 1947-48 | ... | ... | ... | ... | 9.03 "                    |
| 1948-49 | ... | ... | ... | ... | 9.44 "                    |
| 1949-50 | ... | ... | ... | ... | 14.60 "                   |
| Total   |     |     |     |     | <u>47.28</u>              |

The appropriation of the      The appropriation of the above  
under:-

|                                                              |     |     |     |     | (In lakhs of<br>rupees) |
|--------------------------------------------------------------|-----|-----|-----|-----|-------------------------|
| General reserve                                              | ... | ... | ... | ... | 9.23                    |
| Depreciation reserve                                         | ... | ... | ... | ... | 35.00                   |
| Depreciation charged direct to Profit<br>and Loss account... | ... | ... | ... | ... | 0.83                    |
| Dividends paid                                               | ... | ... | ... | ... | 3.92                    |
| Balance                                                      | ... | ... | ... | ... | 0.27                    |
| Total                                                        |     |     |     |     | <u>47.28</u>            |

The Corporation has paid dividends on 6 per cent. cumulative preference shares upto 31st March, 1944. No dividend has been paid on 5 per cent. cumulative preference shares and on ordinary and deferred shares. The contingent liability on account of dividends on cumulative preference shares as at 31st March, 1950, comes to Rs. 12.73 lakhs.

42. *Advantages and disadvantages of the Corporation:* As has been stated earlier, the Corporation has the advantage of having all its plants and its coal mines located together in the same place. But the Corporation's works have not developed according to the original plan. It started production under the exigencies of war. One of the main handicaps from which it suffers today is with regard to the supply of power, which constitutes a considerable element of cost in the production of aluminium. As has been pointed out earlier, it generates its own thermal power, which is costlier than hydro-electric power. Secondly, the arrangements for the generation of power at the Corporation's works are not satisfactory. The Corporation has, at present, only two boilers. For the continuous operation of the aluminium plant, two boilers should work incessantly. This leaves no spare capacity for annual inspection and overhaul. Besides, the possibility of an occasional break-  
This leaves no spare capacity for annual inspection and overhaul. Besides, the possibility of an occasional break-

demand for steam for the alumina house, both for autoclaves and for the evaporators. The Corporation has not been able to install either the third boiler or the low-pressure boilers, with the result that, whenever a boiler is closed down for periodic cleaning or repairs, the output in all sections of the plant is reduced, and a part of the labour force has to remain idle. Besides, the design of the existing boilers itself is not satisfactory, as they are designed to burn a far better grade of coal than that available at site.

43. Another point to which we should like to draw attention is with regard to the Corporation's rolling mill. Its present capacity is much below its ingot production and, therefore, a major portion of the ingot is at present sent to rolling mills in Bombay. The transport cost to Bombay works out to Rs. 131 per ton. Besides, the present rolling mill is incomplete, as the roughing section has not yet been installed.

44. We are glad to note that the Corporation realises these defects in its present equipment and we have been assured that, with the loan of Rs. 50 lakhs secured from the Industrial Finance Corporation, some of these defects would be removed by 1952. In spite of these promised improvements, we believe that the problem of power cost will remain with the Corporation until it can obtain power from the Damodar Valley or Hirakud projects at cheaper rates. The Corporation is also facing considerable difficulty in getting experienced technical personnel and advice. We will revert to this later.

45. During the last few years, two other projects were mooted for the production of virgin aluminium, viz., the National Aluminium Company of Madhya Pradesh and the Singhi Aluminium Company of Calcutta. It is reported that the National Aluminium Company could not raise the necessary capital to commence production. It is also reported that the Madhya Pradesh Government has

New projects for  
production of  
virgin aluminium.

now decided to develop the industry as a State concern, that the machinery for a thermal power plant has been purchased, that a special survey of the bauxite deposits in the State has been made, and that the designing of the construction work for the erection of the necessary plant and equipment has been entrusted to the Dorr Company of the U.S.A. It is, however, understood that the scheme has not progressed further owing to lack of finance. As regards the Singhl Aluminium Company, the firm was granted permission for issue of capital for Rs. 3 crores in December, 1947. The Company's original proposal was to start a factory for the manufacture of 30,000 tons of alumina and 10,000 tons of aluminium ingots per annum. The reduction plant was to be put up at Shimoga in the Mysore State and power for it was to be obtained from the Jog Falls Project. Subsequently, the Company intimated to Government that it intended to install an alumina plant at Dandeli on the Kalinadi river, in the Dharwar district of Bombay. In May, 1949, the Directorate-General of Industries and Supplies, Government of India, informed the Company that only a factory producing 15,000 tons of aluminium per annum could be considered to be an economic unit. Since then, however, nothing further has been heard about the firm.

16. Besides the two main units of the industry producing virgin aluminium, there are a few other firms engaged in the manufacture of aluminium articles for domestic and industrial uses. The manufacturers of such articles may be grouped as follows:-

(i) *Sheets and circles.*- About 20 units for rolling sheets and circles are located in different parts of the country, the main centres being Bombay and Calcutta. The principal units of this group, besides the Indian Aluminium Company and the Aluminium Corporation of India, are Anant Shivaji Desai Topiwala, Bombay; Lallubhai Amichand, Ltd., Bombay; Jeewanlal (1929) Ltd., Calcutta; the Metal Rolling



Works, Bombay; the Indian Metal and Metallurgical Corporation, Madras; and the Kamani Metals and Alloys, Ltd., Bombay. Owing to the non-availability of virgin aluminium, however, most of these factories are either not working to full capacity or have taken to the rolling of other non-ferrous metals, such as copper and brass.

(ii) *Utensils and hollow-ware.* - There are a few manufacturers of aluminium utensils and hollow-ware. This is a well-established branch of the industry, and there is no competition from imports. The principal units in this group are Jeewanlal (1929) Ltd., Calcutta, a subsidiary of Aluminium Ltd. of Canada, with its utensil factories located at Belur, Bombay, Madras, Aden and Rangoon; Indian Aluminium manufacturing Co. Ltd., Calcutta, manufacturing utensils, castings and other fabricated products; Anant Shivaji Desai Topiwala, Bombay; and Wolverhampton Works Co. Ltd., Bombay.

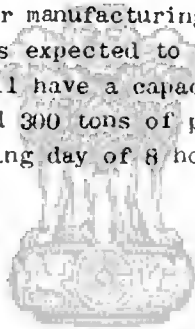
(iii) Venesta, Ltd., Calcutta, a subsidiary of a British Company, manufactures aluminium foils and has a capacity to produce 600 tons of tea-chest lining, 300 tons of foils for the cigarette industry, 100 tons of capsule foils, and 100 tons of milk strips. The raw material required for this section of the industry is aluminium strip, 0.45 mm. thickness, in coils, which is imported.

(iv) The Aluminium Industries, Ltd., Kundara (Travancore-Cochin), which has started the manufacture of aluminium cables steel reinforced (A.C.S.R.) from 25th February, 1950. It also manufactures strong aluminium alloy conductors, insulated aluminium cables for distribution and house wiring, bus-bar conductors, armouring for cables, aluminium conduits, aluminium rotors, and winding wires. The chief raw materials for this section of the industry are 3/8" electrolytic aluminium conductor rods (about 1,500 tons), which have to be imported; it also requires small quantities of high purity aluminium and alloy ingots, alloy rods and tubings, which have also to be imported. We have been also informed by the

D.G.I. & S. that such aluminium cables are also manufactured by the National Insulated Cable Co. Ltd., Calcutta.

(v) Alu Capsules, Ltd. has been manufacturing aluminium capsules since April, 1948, in Kandivlee in Bombay, from capsule foils supplied by Venesta, Ltd., and has a capacity to manufacture 500 lakhs of capsules per annum. The managing agents of Alu Capsules, Ltd. are Messrs. Larsen & Toubro, Ltd., Bombay. The capsules are made under a World Patent and cannot be manufactured by anyone except by this firm and its associate companies in the U.K., Denmark, and other countries in the world.

(vi) *Aluminium powder and paste.*- Jeewanlal (1929) Ltd., has set up a factory at Belapur Road, Kalwa village, Thana district in Bombay, for manufacturing aluminium powder and paste. The factory is expected to go into production in January, 1951, and will have a capacity for manufacturing 250 tons of powder and 300 tons of paste, on the basis of three shifts per working day of 8 hours.



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CHAPTER III  
INDIAN DEMAND, PRODUCTION AND IMPORTS

47. At the previous tariff inquiry held in 1946, the total demand for aluminium in India has been estimated at 13,330 tons. The Board considered that, in the next three years, the demand would increase to about 20,000 tons as new lines of manufacture like aluminium foils, A.C.S.R. cables, paste and powder, etc., were then being established in the country. It was estimated that the demand in the utensils manufacturing section would be about 15,000 tons. The balance of 5,000 tons was made up as follows:-

|                                                                               | <u>Tons</u>  |
|-------------------------------------------------------------------------------|--------------|
| Foils for tea-chest lining. . . . .                                           | 700          |
| Powder for paint industry . . . . .                                           | 500          |
| Castings. . . . .                                                             | 800          |
| Engineering . . . . .                                                         | 2,000        |
| Aluminium rods, aluminium conductors steel reinforced<br>(A.C.S.R.) . . . . . | 1,000        |
| Total . . . . .                                                               | <u>5,000</u> |

48. The Board's estimate of demand was, however, not realised in the next three years. The estimated consumption of aluminium in all forms was about 15,214 tons in 1946-47, 15,569 tons in 1947-48, 13,065 tons in 1948-49 and 10,344 tons in 1949-50. The figures for 1946-47 and 1947-48 are for undivided India. If we exclude these figures, the average consumption for the years 1948-49 and 1949-50 would be 11,705 tons. Many reasons have been given for the lower consumption in the last two years. It has been stated that we have lost a part of the market owing to partition. Another factor responsible for the decrease in consumption

was the operation of the import control during the period. And a third factor, which is stated to have adversely affected the demand for aluminium, is the rise in the price of aluminium.

49. During the public inquiry, we discussed the quantum of demand with the representatives of producers, importers and consumers, and it was agreed that the demand for aluminium in its various forms during the next three years would be approximately as follows:-

|                                                                     | <u>Tons</u>   |
|---------------------------------------------------------------------|---------------|
| Utensils. . . . .                                                   | 12,000        |
| Foils for tea-chest lining, cigarettes, chocolates,<br>etc. . . . . | 1,500         |
| Capsules and milk strips. . . . .                                   | 200           |
| Powder and paint. . . . .                                           | 200           |
| Industrial castings . . . . .                                       | 50            |
| Corrugated sheets . . . . .                                         | 150           |
| Miscellaneous . . . . .                                             | 1,000         |
| Total. . . . .                                                      | <u>15,100</u> |

The estimate given above relates to the demand for aluminium in its pure form and does not include the demand for aluminium alloys which are required for aeroplanes and parts and for pre-fabricated aluminium houses. It should be mentioned that there is at present no plant in India producing aluminium alloys.

50. Appendix VII (a) to (d) shows the rated capacity and actual production of the various units in the country producing aluminium and aluminium products.

*Aluminium ingot.*- The annual rated capacity for the production of ingots is 2,500 tons for the Company and 2,000 tons for the Corporation. The maximum production achieved by the Company was 2,347 tons in 1948-49. It was pointed out that the Company had not been able to achieve 2,500 tons

of production because of the cut in power supply for its works at Alwaye during the summer months. The Corporation achieved the maximum production of 1,511 tons in 1946-47. The production in 1948-49 and 1949-50 was only 1,266 tons and 1,276 tons, respectively. We do not consider that it will be possible for the Corporation to produce 2,000 tons till a third boiler is installed. We, however, expect that the Corporation should be able to produce 1,500 tons both in 1950-51 and 1951-52.

*Sheets and circles.* - The Company is the main producer of sheets and circles in the country. The annual rated capacity of its rolling mill at Belur is 3,000 tons. The maximum production so far achieved was, however, only 2,284 tons in 1948-49. This lower production was due to a breakdown of the main shaft at the works in that year. The Company expects to produce 2,800 tons of sheets and circles a year in the next two years. The rolling capacity of the Corporation is comparatively small, being 500 tons. The maximum production achieved so far was 448 tons in 1948-49. Besides these two main producers, there are a few firms who have set up rolling mills.

*Fabrication of utensils.* - A number of units, large and small, are fabricating utensils from aluminium sheets and circles. These units depend on both imported and indigenous sheets and circles. While a few of them like Jeewanlal, Calcutta, have large and up-to-date plants, a number of units are run on cottage industry basis, particularly in the Madras State. We were not able to obtain accurate information about the production of aluminium utensils by these smaller units. We were given to understand that many of them have either closed down or curtailed their production owing to the difficulty of obtaining the metal. The data furnished by 16 large units are tabulated and shown in Appendix VII (c). The total consumption of sheets and circles, both indigenous and imported, by these 16 units on an average works out to about 9,000 tons per annum.

*Powder, paste, capsules, foils and cables.* - The statement in Appendix VII (d) gives the available information regarding the rated capacity and actual production of aluminium products like powder, paste, capsules, foils and cables.

51. While the ingots produced at the works of the Company have attained a fairly high standard, the products of the Corporation need improvement. In connection with the scheme of subsidy adopted in May, 1949, the Director General of Industries and Supplies has posted at the works of the two firms two junior field officers to report from time to time on the purity of the metal produced by them. According to the report of the junior field officer posted at the Corporation's works, some of the samples tested did not come up to the minimum standard of purity. The Corporation has admitted the defects pointed out by the officer but has explained that the quality of the metal produced sometimes tended to go down owing to lack of co-operation from the workers and has assured the Board that the metal which was found below minimum purity was not passed on to consumers in that condition. Since the major portion of the metal produced in India goes into the manufacture of utensils, any impurity that the metal may contain will have harmful effect on public health. We, therefore, strongly recommend that standard specifications should be laid down to ensure a minimum purity of the aluminium products. We understand that the Indian Standards Institution has already formulated tentative specifications in respect of a number of aluminium products including cast and wrought aluminium for utensils. A minimum purity of 99 per cent. is generally prescribed for the metal in these standards. We recommend that the Indian Standards Institution should take early steps to have these standard specifications finalized.

52. Imports of aluminium ingots and sheets and circles were subject to monetary ceilings from dollar and sterling areas from July, 1948 to June, 1950. By Notification No. 19-ITC/50, dated 5th August, 1950 imports

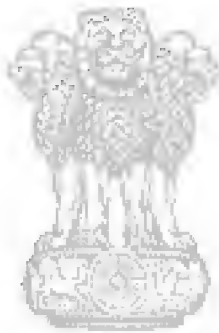
of aluminium ingot have been put under O.G.L. from dollar as well as sterling areas. Imports of sheets and circles were put under O.G.L. from sterling areas. By a subsequent Notification No. 53-ITC/50, dated 25th November, 1950, this has been extended upto 30th June, 1951.

53. Appendix VIII (a) shows the quantity and value of imports by countries of origin, of aluminium ingots, aluminium sheets and circles and other manufactures of aluminium, separately for each year from 1944-45. It will be seen from this table that the quantity of aluminium ingots imported into India was only 937 tons in 1944-45 but it increased substantially to 3,078 tons in 1945-46; the peak year of import was 1946-47 when it was 7,355 tons. There has been a steep fall in imports from 1948-49 onwards, the figures being 330 tons in 1948-49 and only 15 tons in 1949-50.

54. The import of aluminium sheets increased from 300 tons in 1944-45 to 2,066 tons in 1948-49. In the next year, the import of sheets declined to 1,267 tons. Imports of circles were about 108 tons in 1944-45, 1,400 tons in 1945-46, 2,649 tons in 1946-47, 4,870 tons in 1947-48, 4,743 tons in 1948-49, and 4,860 tons in 1949-50. India imported 15 tons of other manufactures of aluminium in 1944-45 which increased to 2,963 tons in 1947-48 but declined to 530 tons in 1949-50.

55. Taking aluminium in all its forms, imports increased from 1,361 tons in 1944-45 to 12,446 tons in 1947-48. This was for undivided India. Thereafter, there was a decline in imports; in 1948-49, imports into the Indian Union were 9,453 tons, and in 1949-50, 6,673 tons. The relevant figures are given in Appendix VIII (b). We were also informed during the inquiry that actual import of aluminium in all forms during the first nine months of 1950 was about 3,000 tons, out of which sheets and circles together accounted for nearly 2,000 tons. It will be noticed from Appendix VIII (a) that India's imports of ingots have mainly been from Canada, while sheets and circles came from the U.K. We have esti-

mated the demand for aluminium in India at about 15,000 tons per annum during the next three years and taking the Indian production at about 4,000 tons, there would be scope for imports of aluminium to the extent of 11,000 tons.



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## CHAPTER IV

COST OF PRODUCTION AND FAIR EX-FACTORY PRICE  
THE INDIAN ALUMINIUM COMPANY LTD.

56. Financial accounts of the Company are closed at the end of September each year. Costs at different stages of production have been examined in detail for the period from October, 1948 to September, 1949, and for the nine months ended 30th June, 1950. The Company maintains an up-to-date and scientific system of cost accounting and the activities of the different works are controlled effectively from the Head Office in Calcutta. The cost and financial accounts are reconciled every month.

57. As both the Company and the Corporation have requested that the details of costs should be kept confidential, we have discussed the costs in this Report only under certain broad headings. A detailed cost report, however, is being separately forwarded to Government as a confidential enclosure to this Report.

58. The production of aluminium falls into three different stages—

- Estimates of production.
- (a) mining of bauxite;
  - (b) production of alumina; and
  - (c) production of ingots.

The ingots are later rolled into circles and sheets. Before we pass on to the costs, we shall first examine the rated capacity and actual production during the last three years and estimate the production for 1950-51 and 1951-52.

| Particulars                | Capacity | Production              |           |         | Board's estimate for |         |
|----------------------------|----------|-------------------------|-----------|---------|----------------------|---------|
|                            |          | 1947-48 :               | 1948-49 : | 1949-50 | 1950-51 :            | 1951-52 |
| Alumina (hydrate in tons). | 8,500    | 1,792<br>(for 7 months) | 4,380     | 5,480   | 4,752                | 4,950   |
| Ingot (in tons)            | 2,500    | 2,172                   | 2,347     | 2,302   | 2,400                | 2,500   |

The maximum production of ingot so far attained was 2,347 tons in 1948-49. We have discussed with the Company the possibilities of raising the production to the installed capacity. The Company has pointed out that one of the main difficulties in increasing the production at present is the cut in power supply at Alwaye during the summer months. The Company, however, has agreed that we can estimate our costs on a production of 2,400 tons of ingot in 1950-51. We anticipate that the Travancore-Cochin Government will be in a position to supply power for a production of 2,500 tons in 1951-52 and our estimates of cost for that year are based on that assumption. The production of alumina and, in turn, the mining of bauxite have to be restricted to the actual requirements for ingot production and our estimates are, therefore, adjusted accordingly. We have taken 1.98 tons of alumina for the production of one ton of aluminium and 2.3 tons of bauxite for the production of one ton of alumina. These figures have been adopted after considering the Company's achievement in this respect in the recent past.

59. Our estimate of bauxite cost is Rs. 24 per ton.

Cost of bauxite. This is based on the lowest cost so far achieved, i.e., during the period from 1st April, 1950 to 30th June, 1950. The principal elements of cost are (i) raising cost, (ii) transport charges to Lohardaga and (iii) loading cost and railway freight to Muri. These constitute 57.95 per cent., 16.78 per cent. and 25.27 per cent. respectively of the total cost. It may, however, be mentioned that the transport charges to Lohardaga include only the operating cost of the rope-way. It may be pointed out that our estimate of cost for the period April/June, 1950, is based on an annual rate of 15,500 tons. The future estimate is, however, related to an annual output of 11,000 tons, which will be required for 2,500 tons of aluminium. The Company, by effecting economies in various directions, should be able to keep down the costs to the level actually achieved by it during the period April/June, 1950.

60. The cost of alumina including freight from Muri to Always has been estimated at Rs. 462.6 per ton in 1950-51 and Rs. 453.3 in 1951-52. Our estimates have been made after careful examination of the actual costs during 1948-49, the first six months of 1949-50 and the subsequent three months of 1949-50. The cost was the lowest during the last period because of the higher production. The break-down of the actual costs during the above three periods and the Board's estimates are given below:-

## COST OF ALUMINA

| Period                                                 | : From 1st :<br>: Oct. 1948 :<br>: to 30th :<br>: Sept. 1949 :<br>: (12 months) : | : From 1st :<br>: Oct. 1949 :<br>: to 31st :<br>: March 1950 :<br>: (3 months) : | : From 1st :<br>: April 1950 :<br>: to 30th :<br>: June 1950 :<br>: (3 months) : | : Board's estimate :<br>: of future cost :<br>: 1950-51 :<br>: 1951-52 : |
|--------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| Production in tons:                                    | 4,360                                                                             | 2,469                                                                            | 1,539                                                                            | 4,752 : 4,950                                                            |
|                                                        | Rs.                                                                               | Rs.                                                                              | Rs.                                                                              | Rs. Rs.                                                                  |
| 1. Raw materials                                       | 162.03                                                                            | 148.24                                                                           | 127.10                                                                           | 130.99 130.99                                                            |
| 2. Power & Fuel                                        | 93.50                                                                             | 83.71                                                                            | 78.86                                                                            | 77.44 77.44                                                              |
| 3. Labour                                              | 34.58                                                                             | 39.77                                                                            | 30.49                                                                            | 34.22 32.85                                                              |
| 4. Repairs & main-<br>tenance & con-<br>sumable stores | 97.21                                                                             | 84.65                                                                            | 70.40                                                                            | 60.15 57.74                                                              |
| 5. Establishment<br>and overheads                      | 123.43                                                                            | 102.26                                                                           | 83.02                                                                            | 74.20 71.68                                                              |
| Total                                                  | 511.35                                                                            | 458.83                                                                           | 389.87                                                                           | 377.00 370.70                                                            |
| Railway freight<br>from Muri to<br>Always              | 85.60                                                                             | 85.60                                                                            | 85.60                                                                            | 85.60 85.60                                                              |
| Total                                                  | 596.95                                                                            | 544.43                                                                           | 475.47                                                                           | 462.60 456.30                                                            |

It will be noticed from the above table that the actual cost has been steadily coming down. In our estimates for 1950-51 and 1951-52, we have allowed a slightly higher rate for raw materials and labour than the actuals for the period April-June, 1950. As regards raw materials, although the Company has been able to reduce the consumption of bauxite, this improvement has been more than offset by the higher cost of soda ash. We have allowed the current price for soda ash, i.e., Rs. 411 per ton, in our future estimates.

The increase in labour charges is due to the lower production which we have estimated. The two heads under which we have made reductions are (i) repairs and maintenance and (ii) establishment and overheads. We have examined in detail the various items coming under these heads and consider that there is sufficient scope for economy, especially in establishment.

61. Our estimate of ingot cost is Rs. 1,806.86 per ton for the year 1950-51 and Rs. 1,780.44 per ton for the year 1951-52. We have made considerable reductions in future costs as compared with the actuals of the recent periods. The break-down of past actual costs and the Board's estimates is given below:-

#### COST OF ALUMINIUM INGOTS

| Production (tons)                                                                                     | 1949-50  |          |          | Board's estimate |          |
|-------------------------------------------------------------------------------------------------------|----------|----------|----------|------------------|----------|
|                                                                                                       | 1948-49  | 6 months | 3 months | 1950-51          | 1951-52  |
|                                                                                                       | 2,347    | 1,175    | 504      | 2,400            | 2,500    |
|                                                                                                       | Rs.      | Rs.      | Rs.      | Rs.              | Rs.      |
| 1. Raw materials                                                                                      | 1,479.20 | 1,327.86 | 1,109.05 | 1,192.52         | 1,179.03 |
| 2. Power & fuel                                                                                       | 234.56   | 232.24   | 235.01   | 230.07           | 230.07   |
| 3. Labour                                                                                             | 62.05    | 63.64    | 73.98    | 61.50            | 59.04    |
| 4. Repairs & maintenance & consumable stores, etc.                                                    | 80.71    | 66.80    | 73.74    | 60.84            | 58.01    |
| 5. Pot-lining expenses (excluding cryolite, fluoride and fluor-spar which are included under item 1). | 7.65     | 13.08    | 11.08    | 18.58            | 17.83    |
| 6. Other overheads inclusive of establishment and royalty.                                            | 153.45   | 153.62   | 176.92   | 139.61           | 134.76   |
| 7. Head office expenses                                                                               | 142.68   | 169.46   | 197.66   | 105.94           | 101.70   |
| Total cost (excluding depreciation).                                                                  | 2,180.30 | 2,026.70 | 1,877.44 | 1,806.86         | 1,780.44 |

62. We have allowed a higher cost for raw materials than the actuals for April-June, 1950. This is because the raw material consumption in the period April-June was below normal, primarily owing to the use of accumulated recovered bath, which is composed of alumina and cryolite. It will,

however, be seen that as compared with the cost in the half year October 1949/March 1950, we have made a reduction of Rs. 135 in cost of raw materials. This has been possible because the alumina cost we have taken in our future estimate is Rs. 462.3 per ton as against Rs. 544.43 per ton in October 1949/March 1950. Another item which requires explanation is the expenditure on pot-lining. This includes the cost of pot-lining mix made from indigenous raw materials-metallurgical coke, coal-tar and pitch and labour charges. The Company represented that the expenditure incurred on pot-lining during the period 1948-49 and the first nine months of 1949-50 should not be taken as the basis in estimating future costs. During these two periods, the Company had been using a greater number of Canadian linings and the pot failures were only six and eight respectively. During the period July/September, 1950, there were nine pot failures when they had been using more pots with Indian linings. Besides, the average life of Indian lining is 655 days as against 1,500 days with the Canadian lining. With second replacement, the life of Indian lining goes down to 527 days. The number of pots with the Canadian lining, at present, have already served about 1,500 days. And it is the intention of the Company to use only Indian lining hereafter. The use of the Indian lining should be encouraged and we have made a small allowance for the higher cost. We have allowed only 900 pot-days, to which the Company has agreed. We are, however, confident that with greater experience in the preparation of the mix, the life of the Indian pot-lining will improve.

63. We have made considerable reduction in other overheads and head-office expenses. It will be seen from the figures given above that the expenditure under these two heads has been steadily increasing as compared with 1948-49. During the last two years, one item alone, viz., the salaries of staff at the head office including the salaries of senior officers at the Works shown under head-office expenses, has been increasing by about Rs. 50,000 a

year. This increase in expenditure on the salaries of the higher staff is not balanced by a corresponding increase in production, with the result that the unit cost is overloaded by this item. We have, therefore, considered that a substantial reduction in these two items is justifiable.

64. We have to mention here that in estimating the ingot cost we have taken electricity charges at Rs. 75 per kw. year, which is the amount at present provisionally paid by the Company and is shown in its books. It has been brought to our notice that the Travancore-Cochin Government have recently demanded Rs. 132 per kw. year. The matter, however, is under dispute now and has been referred to an Arbitration Tribunal. In case it is eventually decided that the Company should pay a higher rate than at present, the ingot cost will go up by Rs. 2.716 per ton for every increase of one rupee in the rate per kw. year.

65. In the case of the rolling mills, we examined the cost for the year ended 31st March, 1949, and for the period April/June, 1950. We did not examine the cost for the period of April, 1949 to March, 1950, as there had been practically no production from January to March owing to a labour strike. The following statement gives the actual production and cost during the above periods and also the Board's estimate of future production and cost.

## THE INDIAN ALUMINIUM CO. LTD., CALCUTTA

## COST OF PRODUCTION PER TON OF SHEETS AND CIRCLES AT BELUR ROLLING MILLS

| Capacity for sheets and circles<br>(equated to 20 gauges)                                              |        | 2,770 tons             |                       |                                         |                        |                       |                                         |
|--------------------------------------------------------------------------------------------------------|--------|------------------------|-----------------------|-----------------------------------------|------------------------|-----------------------|-----------------------------------------|
|                                                                                                        | Period | Sheets                 |                       |                                         | Circles                |                       |                                         |
|                                                                                                        |        | Actual cost<br>1948-49 | (April-June,<br>1950) | Board's estimate for<br>1950-51 1951-52 | Actual cost<br>1948-49 | (April-June,<br>1950) | Board's estimate for<br>1950-51 1951-52 |
| Production in tons (equated to 20 gauge)*                                                              |        | 118                    | 25                    | 410 410                                 | 1,952                  | 550                   | 2,177 2,177                             |
|                                                                                                        |        | Rs.                    | Rs.                   | Rs. Rs.                                 | Rs.                    | Rs.                   | Rs. Rs.                                 |
| Cost of metal (inclusive of railway freight on ingots from Alwaye to Belur and metal loss in rolling). |        | 3,455.32               | 3,116.45              | 2,997.13 2,975.75                       | 3,455.32               | 3,116.45              | 2,997.13 2,975.75                       |
| Conversion cost                                                                                        |        | 692.75                 | 684.26                | 693.61 693.61                           | 648.12                 | 667.03                | 622.38 622.38                           |
| Cost of production (excluding depreciation on rolling mills).                                          |        | 4,148.07               | 3,800.71              | 3,690.74 3,559.36                       | 4,103.44               | 3,783.48              | 3,619.51 3,498.13                       |

It should be noted that the total production comprising various gauges of sheets and circles, in 1950-51 and 1951-52 would be 2,800 tons, which, in terms of 20 gauge, would be equivalent to 2,587 tons.

66. Sheets and circles are the two items rolled in the mills. Of these, circles constitute about 85 per cent. of the production. Both these items are rolled in different gauges; but the most common gauge is 20 which forms 55 per cent. of the production. We have, therefore, worked out cost for this gauge after equating the other gauges to 20 gauge. The Company has agreed to this procedure.

67. The rolling mills' capacity is estimated at 3,000 tons a year. The Company, however, pointed out that it could not produce more than 2,800 tons a year. Considering their past performance, we have taken 2,800 tons as their annual production. It may be pointed out that even to attain this production, the Company will have to use its entire production of ingots and, in addition, about 400 tons of imported ingot in 1950-51 and about 300 tons of imported ingot in 1951-52. It should be noted that, in terms of 20 gauge sheets and circles, the production would be equivalent to 2,587 tons.

68. The ingot cost we have taken here is the fair selling price of indigenous ingot, inclusive of depreciation, interest on working capital and return on the block relating to all the stages up to and including the ingot stage. To arrive at the fair selling price of sheets and circles, we have to add to the cost of production, interest on working capital for the rolling operations and depreciation and return on block relating to the rolling mills alone. It may be mentioned that this fair selling price relates to the sheets and circles produced by the Company from its own ingots.

69. From the figures of cost given above, it will be seen that the cost of sheets is higher than that of circles. We understand that, in Canada and other countries where sheets and circles are rolled, sheets cost less than circles. The Company has, however, explained that the higher cost of production for sheets in India is due to the higher finishing charges for sheets.



70. Our estimates of future costs are lower than the actuals for the past. This is due mainly to the lower ingot cost which we have estimated and, to a small extent, to the higher production we have taken for the future than the actuals of the previous periods.

71. We shall now discuss the three remaining items, depreciation, interest on working capital and return on block, which have to be added to the cost of production in order to arrive at the fair selling price.

Depreciation, interest on working capital and return on block.

72. *Depreciation.*- The value of the block of the Company at original cost is Rs. 253.90 lakhs. This includes mining rights, lands and buildings and plant and machinery at all the works. The value of the mining rights is Rs. 9.71 lakhs. The block for the rolling mills including land and buildings is Rs. 36.68 lakhs. The remaining block, i.e., Rs. 207.51 lakhs is for the works at Iohardaga, Muri and Alwaye. This includes the block on rope-way also. According to the books of the Company, the assets of the Company exclusive of mining rights, are written down to Rs. 176.60 lakhs as at 30th September, 1949. If the Company had written down its assets at the rates that the income-tax authorities would have permitted, the value of the block as at 30th September, 1949, would have been about Rs. 149 lakhs. We have now to decide what should be the allowance for depreciation. Two issues arise in this case: The first question is, should depreciation be allowed for the whole block. As has been pointed out earlier, the Company's rope-way and the alumina plant are not working to full capacity. We realise that in a chemical plant like the alumina plant, the wear and tear will be nearly the same whether it works to full capacity or at a lower capacity. But, in this particular case, this is not going to be a regular feature. In another three or four years, with a small additional investment, the Company will not only be producing alumina to the present capacity of the plant but

also increase the capacity as well as production to a considerable extent. While the present rated capacity of the plant is 5,500 tons and production 5,000 tons, the extended plant will have a capacity of 10,000 tons and production will also be stepped up to 10,000 tons. The Company will then be in a better position to allow a higher amount of depreciation so as to make up any deficiency which will arise because we have allowed depreciation on block of the alumina plant on the basis of the present utilised capacity. Having regard to this possibility of making suitable adjustment in the near future when production will be doubled, and, more specially, to avoid unduly inflating the present high costs, we have allowed depreciation on two-thirds of the block. As regards the ropeway, we are advised that it is the smallest economic unit. Consequently, although it is at present utilised only to the extent of one-third of the capacity, we have allowed depreciation on two-thirds of the block. On all other items, we have taken the block at full value. Secondly, we have to decide the rate of depreciation allowance. According to the income-tax law, the rate allowed is 20 per cent. for plant and machinery when it works three shifts. The third shift allowance of 5 per cent. is, however, a special concession given to the industry to allow it to write off the block in a shorter period. The extra allowance is not, in our view, related to the actual wear and tear of the plant so as to form an element of cost. We discussed this question with the Company and it agreed that 15 per cent. would be a reasonable rate of depreciation for the purpose of determining cost. We have, therefore, allowed 15 per cent. depreciation on plant and machinery. Rates allowed for income-tax purposes have been taken in respect of other items of the block, such as buildings, furniture, etc.

73. We discussed with the Company its requirements of working capital under various heads like raw materials or stores, labour, finished goods in stock, etc., and it was agreed that Rs. 24 lakhs would

Interest on  
working capital.

be a reasonable amount of working capital for a production of 2,400 tons of ingot in 1950-51 and Rs. 25 lakhs for a production of 2,500 tons in 1951-52. For the rolling operations, we have taken Rs. 15 lakhs as working capital for a production of 2,800 tons of sheets and circles. We have allowed 4 per cent. interest on these amounts in our costs.

74. This is one of the most difficult issues we have to deal with. In the Board's previous inquiry in 1946, it was considered that a rate of 10 per cent. on the cost of production should be adequate for a reasonable return on block as well as interest on working capital. The consideration which weighed with the Board in providing for return on this basis has been explained on pages 16-17 of its Report (1946) on the Aluminium Industry in the following words:-

Return on  
block.

"The usual practice followed by the Board is to allow 4 per cent. interest on working capital and 10 per cent. profit on the block. If the interest and profit had been calculated on this basis in the present case, they would have amounted roughly to Rs. 700 per ton, which is quite out of proportion not only to the cost of production but also the price of imported aluminium. The block in the case of the Company is Rs. 151 lakhs and the working capital is estimated roughly at Rs. 25 lakhs, equal to six months' turnover. The profit which we have allowed, viz., 10 per cent. on cost represents 2½ per cent. on the block and working capital put together. This may appear to be somewhat low, but it has to be remembered that for a concern like this the block is very high and the usual return of 10 per cent. on block cannot, in the circumstances, be accepted, particularly at a time when the industry is struggling to make both ends meet and is claiming a subsidy to be able to withstand competition from abroad. A particular reason why a full return on the entire block capital forms such a high proportion (40 per cent.) of the cost of production per unit lies in the present small output of the producing concerns relatively to their productive capacity. If and when the full rated production of the two concerns is attained, the disparity in results between the two bases of reckoning profits will not be so considerable."

75. The provision for return on the above basis in the case of the aluminium industry has, however, given rise to criticism. The Fiscal Commission also, in the course of an informal exchange of views with the Board, made a special mention of this case, and have referred to it in their Report (page 177). In their representations to Government and to the Board, the Company and the Corporation have also contended that the rate of return and interest provided for the industry has been far too inadequate. We have taken account of the various comments that have been made and have carefully reconsidered the matter. Having regard to (a) the high capital cost necessarily involved in this industry, (b) the need for further heavy investment for enlarging the existing units to an optimum capacity and for establishing one or two more units, (c) the rate of return currently earned by similar other industries in the country, and (d) the present condition of the capital market, we consider that a higher rate of return than was allowed on the previous occasion, should be provided. In determining a suitable rate for this purpose, we have also considered the financial condition of the two units. In the first place, the Company has to pay a dividend of 5 per cent. and the Corporation a dividend of 5 to 6 per cent. on their cumulative preference shares. In the second place, neither the Company nor the Corporation has been able to pay any dividends to the ordinary shareholders up to the present. Further, in the case of the Corporation, even preference shareholders have not been paid any dividends subsequent to the year 1943-44. Moreover, the Corporation has recently obtained a loan of Rs. 50 lakhs from the Industrial Finance Corporation in which the rate of interest payable is 5 per cent. These factors would indicate that the rate of return should not be less than 6 per cent. The maximum rate of return which the Board has allowed for a number of war-time industries is 10 per cent. In this case, since the scale of production in the existing units is far below

the optimum level, the industry cannot claim to receive the same rate of return as it could expect on the basis of optimum production. It may be pointed out that, if the Company's production of ingots at Alwaye could be increased from 2,500 to 5,000 tons, the cost would be reduced by Rs. 400 per ton and the profits would go up appreciably. After fully weighing all these factors, we have come to the conclusion that a rate of 7 per cent. on the gross block would be a suitable rate in this case and we have provided accordingly.

76. The following two statements give the cost of production and fair selling prices of ingots and sheets and circles as estimated by the Board for the years 1950-51 and 1951-52:-

#### FAIR SELLING PRICE PER TON OF ALUMINIUM INGOT

| Period                                                  | 1950-51   | 1951-52   |
|---------------------------------------------------------|-----------|-----------|
| Estimated production                                    | 2400 tons | 2500 tons |
|                                                         | Rs.       | Rs.       |
| 1. Cost of production (excluding depreciation). . . . . | 1808.86   | 1780.44   |
| 2. Depreciation . . . . .                               | 400.20    | 333.18    |
| 3. Interest on working capital. . . . .                 | 40.00     | 40.00     |
| 4. Return on block capital. . . . .                     | 633.56    | 608.22    |
| Fair Selling Price. . . . .                             | 2882.62   | 2761.84   |

## FAIR SELLING PRICES PER TON OF ALUMINIUM SHEETS AND CIRCLES

| Product                                        | Sheets   |          | Circles   |           |
|------------------------------------------------|----------|----------|-----------|-----------|
| Period                                         | 1950-51  | 1951-52  | 1950-51   | 1951-52   |
| Estimated production equated to 20 gauges      | 410 tons | 410 tons | 2177 tons | 2177 tons |
|                                                | Rs.      | Rs.      | Rs.       | Rs.       |
| 1. Cost of production (excluding depreciation) | 3680.74  | 3559.36  | 3619.51   | 3498.13   |
| 2. Depreciation. . . . .                       | 40.15    | 34.61    | 84.00     | 72.41     |
| 3. Interest on working capital . . . . .       | 23.44    | 23.36    | 23.33     | 23.21     |
| 4. Return on block capital                     | 99.72    | 99.91    | 99.25     | 99.26     |
| Fair Selling Price                             | 3844.05  | 3717.24  | 3826.09   | 3693.01   |

77. After the Board's costs were finalised, it was brought to the notice of the Board by the Company that the Bengal Government Industrial Tribunal had given a fresh award on 21st September by which the Wages Bill had increased by Rs. 38,640 per year. The Company has, therefore, requested that this amount should be provided for in the costs. We consider this demand reasonable and, if this is allowed the cost will go up by Rs. 14.94 per ton and the fair selling prices of sheets and circles equated to 20 gauge will be:-

| Sheets  |         | Circles |         |
|---------|---------|---------|---------|
| 1950-51 | 1951-52 | 1950-51 | 1951-52 |
| Rs.     | Rs.     | Rs.     | Rs.     |
| 3858.99 | 3732.18 | 3841.03 | 3707.95 |

## CHAPTER V

## COST OF PRODUCTION AND FAIR EX-FACTORY PRICE.

## THE ALUMINIUM CORPORATION OF INDIA, LTD.

78. We have examined the costs of the Corporation for the year ended 31st March, 1950, and for the two months of April/May, 1950. The Corporation's works at Jayakaynagar was affected by a partial strike from the middle of March to the middle of July, 1949. In determining the costs for 1949-50, we have excluded all items of abnormal expenditure incurred during the strike period.

79. Before we proceed to discuss the cost, we are constrained to state that the Corporation is not maintaining a proper system of costing. The Board's Cost Accounts Officer had therefore to make an attempt to arrive at the actual cost from the financial accounts of the Corporation. In arriving at the cost, however, he had had the benefit of the advice of the Board's Technical Adviser. He had also had discussions with the technical and accounts staff of the Corporation. It is necessary to mention that no details regarding the pot-lining expenses are being maintained by the Corporation. We have also to mention that no separate records are maintained regarding the actual expenses for the manufacture of sheets and circles respectively. This is certainly an unsatisfactory position for an important unit like the Corporation. We have, however, examined carefully all the points placed before the Board by the Corporation before estimating the fair selling prices. We recommend strongly that the Corporation should immediately start maintaining a scientific system of costing so that its costs may be reconciled with the financial accounts.

80. The following statement gives the actual production of alumina and ingot in 1949-50 and the Board's estimates of production. estimates for 1950-51 and 1951-52. We have excluded the cost of alumina and ingot for the period April/May 1950 for the following reasons: First, alumina calcined during the period was only about a quarter of what is normally expected. And secondly, the raw material consumption for ingot production was very high.

| Particulars                     | Capacity | 1949-50 | Board's estimate for |         |
|---------------------------------|----------|---------|----------------------|---------|
|                                 |          |         | 1950-51              | 1951-52 |
| Alumina (hydrate -<br>in tons). | 5,000    | 2,764   | 3,000                | 3,000   |
| Ingot (in tons)                 | 2,000    | 1,276   | 1,500                | 1,500   |

It will be seen from the above statement that the actual production during the year 1949-50 was only 1,276 tons of aluminium ingot. The Corporation, however, had achieved a production of 1,511 tons of ingot in 1946-47. We discussed with the Corporation as to what production figures should be taken in estimating the future costs and it was agreed that with greater efficiency in the cell house, the firm could achieve a production of 1,500 tons of ingot. We have estimated the production of alumina at 3,000 tons, i.e., on the basis of 2 tons of alumina for the production of one ton of ingot, which is the normal rate of consumption at the Corporation works.

81. The actual quantity of bauxite raised by the Bauxite cost. Corporation in 1949-50 was 12,077 tons, which was nearly double its requirements for alumina production. We have estimated the raising for the next two years on the basis of actual requirements of bauxite for the production of alumina which we have estimated. The lowest cost achieved by the Corporation was Rs. 23.15 per ton of bauxite in April/May, 1950. This we have rounded off to Rs. 23 per ton in our future estimates. No further reduction seems to be possible in the bauxite cost. The three principal



items in bauxite cost are mining cost, transport charges and railway freight. Of these, the only item in which a reduction can be considered is the mining cost. In the case of the Corporation, the mining is done mostly with contract labour. One advantage of this is that the need for supervisory staff can be reduced and we find that the overall cost of mining is only Rs. 6.77 per ton as compared with Rs. 13.95 per ton in the case of the Company, where labour is employed on a daily wage basis with adequate supervisory staff. We, therefore, consider that it is reasonable to take the cost of bauxite at Rs. 23 per ton.

82. The alumina cost of the Corporation for the year Alumina cost. 1949-50 was Rs. 340.35 per ton. On the basis of 3,000 tons production, we have estimated the cost for 1950-51 at Rs. 324.62 per ton and Rs. 320.42 per ton in 1951-52. The break-down of costs is given below:-

| Period                                      | 1949-50 | Board's estimate for |         |
|---------------------------------------------|---------|----------------------|---------|
|                                             |         | 1950-51              | 1951-52 |
| Production - Alumina (Hydrate) - (tons)     | 2784.0  | 3,000                | 3,000   |
| Alumina - (calcined)                        | 3242.0  | 3,000                | 3,000   |
|                                             | Rs.     | Rs.                  | Rs.     |
| 1. Raw materials                            | 150.76  | 137.02               | 137.02  |
| 2. Power and fuel                           | 66.40   | 65.67                | 64.96   |
| 3. Labour                                   | 37.82   | 39.14                | 35.65   |
| 4. Repairs, maintenance & consumable stores | 30.85   | 29.56                | 29.56   |
| 5. Establishment & other overheads          | 54.52   | 53.23                | 53.23   |
| Total cost                                  | 340.35  | 324.62               | 320.42  |

83. The most important element in the alumina cost is the cost of raw materials - bauxite and caustic soda. The Corporation represented that the purity of caustic soda that it was receiving varied between 96 per cent.

and 98 per cent. It, therefore, claimed that the normal consumption of caustic soda should be taken at 0.150 ton of caustic soda per ton of alumina. We have examined this point carefully and consider that 0.144 ton of caustic soda for the production of one ton of alumina is reasonable. This was the actual rate of consumption during the period 1948-49 also. It may also be pointed out that, from a theoretical point of view, even this is on the high side, and that the last Board allowed only 0.08 ton of caustic soda for the production of one ton of alumina. In our future estimate, we have adjusted the labour charges and cost of repairs, maintenance and consumable stores on the basis of production of 3,000 tons of calcined alumina. In our estimate for 1951-52, we have further reduced the labour charges by Rs. 3.49 for the production of one ton of alumina. We have done this because we were convinced that there was considerable excess labour employed at present.

84. The cost of ingot was Rs. 2169.71 per ton in Ingot cost. 1949-50. Our estimates for 1950-51 and 1951-52 are Rs. 1875.62 and 1838.37 per ton respectively. The break-down of ingot cost is given below:-

| Period                                            | 1949-50        | Board's estimate for |                |
|---------------------------------------------------|----------------|----------------------|----------------|
|                                                   |                | 1950-51              | 1951-52        |
| Production (tons)                                 | 1276.28        | 1500                 | 1500           |
|                                                   | Rs.            | Rs.                  | Rs.            |
| 1. Raw materials                                  | 1071.38        | 920.02               | 910.42         |
| 2. Power and Fuel                                 | 656.18         | 552.50               | 532.42         |
| 3. Labour                                         | 91.68          | 85.09                | 77.52          |
| 4. Repairs & Maintenance<br>and Consumable stores | 106.14         | 97.53                | 97.53          |
| 5. Other overheads                                | 121.34         | 130.04               | 130.04         |
| 6. Head-office expenses                           | 122.99         | 90.44                | 90.44          |
| Total cost<br>(excluding depreciation)            | <u>2169.71</u> | <u>1875.62</u>       | <u>1838.37</u> |

It will be seen from the above statement that in almost every case our estimates of future costs are lower than those of 1949-50. The only item where we have allowed an increase in cost is in 'Other Overheads'. This has become necessary because part of the overheads was previously borne by the utensils manufacturing section which is now closed. Reduction in cost of raw materials is due to the lower cost of alumina as estimated by us and also due to the lower consumption of cryolite and other raw materials allowed.

85. The Corporation made strong representations that the 12 sets of carbon blocks per year for pot-lining that we have allowed in our future estimates would be very low. As against this, it claimed 30 sets a year as the normal rate of consumption. As the Corporation is using first class imported carbon blocks for pot-lining, the life of pot-lining should be as good as what is obtained in foreign countries, which is not less than 1400 pot-days. We have made sufficient allowance for the inexperience of the staff at the works of the Corporation and we consider that a life of 900 days for pot-lining is reasonable. The number of pots which we have allowed for the production of 1,500 tons of ingot is 30. On the basis of 900 days' life for pot-lining, the number of carbon blocks required should not be more than 12. In this connection, it may be pointed out that we have also estimated a life of 900 days for the Company's pot-lining, which is monolithic and is made of indigenous raw materials.

86. The reduction of costs in other items is due to the higher production of ingots we have estimated. In 1951-52 costs, we have made a further reduction of Rs. 7.57 in labour cost per ton of ingot production as the Corporation itself admitted that there was excessive labour in the cell house at present.

87. We have already pointed out that the Corporation is not maintaining separate costs for sheets and circles. It has not, therefore, been possible to estimate costs for sheets and circles separately. The cost given below is for the articles taken together, equated to 20 gauges. The following statement gives the break-down of costs:-

| Capacity equated to 20 Gauges                                 |                | 450 tons             |                |
|---------------------------------------------------------------|----------------|----------------------|----------------|
| Period                                                        | 1949-50        | Board's estimate for |                |
|                                                               |                | 1950-51              | 1951-52        |
| Production                                                    | 413 tons       | 450 tons             | 450 tons       |
|                                                               | Rs.            | Rs.                  | Rs.            |
| 1. Cost of metal (including melting loss). . . . .            | 3368.53        | 2874.87              | 2719.27        |
| 2. Conversion cost . . . . .                                  | <u>962.36</u>  | <u>880.00</u>        | <u>880.00</u>  |
| Total cost (excluding depreciation on rolling mills). . . . . | <u>4330.89</u> | <u>3884.67</u>       | <u>3599.27</u> |

88. Our estimates of costs are based on a production of 450 tons. The production in 1949-50 was 413 tons. As in the case of the Company, the metal cost taken here is based on the fair selling price that we have estimated for the ingot produced by the Corporation. Our estimate of cost for 1950-51 is lower than the 1949-50 cost by Rs. 646.22 per ton. This is largely due to the lower cost of ingot we have estimated and, to some extent, due to the smaller allowance for metal loss in re-melting which we have taken at 0.5 per cent. as against 2.4 per cent. in 1949-50. In the case of the Company also, the metal loss that we have allowed is only 0.5 per cent. We have made about 9 per cent. reduction in the conversion cost, which we consider to be practicable of achievement by the Corporation. The Corporation is employing on an average 130 workers for a production of 450 tons, while the Company is employing on an average 500 workers for a production of 2,800 tons

or 2,587 tons equated to 20 gauges of sheets and circles. We consider that substantial economy is possible in labour charges which form one of the important items of conversion cost.

89. We have, now, to determine the rates of depreciation, interest on working capital and fair return on block. As in the case of the Company, we have allowed a 4 per cent. interest on the working capital and a 7 per cent. return on the gross value of the block which amounted to Rs. 120.29 lakhs. The working capital that we have taken is Rs. 15 lakhs for the production of 1,500 tons of ingot and Rs. 2.6 lakhs for 450 tons of sheets and circles. The Corporation, however, claimed Rs. 33.05 lakhs for the production of ingot alone. The amount that we have allowed for ingots works out to a little more than six months' cost of production. In the case of the Company also, we have allowed only Rs. 24 lakhs for a production of 2,400 tons, to which they have agreed.

90. The question of depreciation requires detailed examination. The value of the block of the Corporation at original value is Rs. 120.29 lakhs. This includes mining rights, lands and buildings and plant and machinery. The value of mining rights is Rs. 1.24 lakhs. The block for the rolling mills including land and buildings, is Rs. 8.29 lakhs. The remaining block, i.e., Rs. 110.76 lakhs, is for the production of alumina and ingots. It is not possible to determine the actual amount written down in the books of the Company as the amount of depreciation provided in the books covers the other activities of the Corporation, such as the utensils section, activated carbon plant and a portion pertaining to sale of coal. As a rough estimate, we may, however, take the written-down value at Rs. 87.5 lakhs. If the Corporation had written down its assets at the rates allowed by the income-tax authorities, the value would have been Rs. 57.5 lakhs as at 31st March, 1950.

91. The Corporation claimed that depreciation should be allowed on the written-down value of the block as in the books of the Corporation. We have considered this point and have decided to estimate the written-down value on the basis of the rates allowed by the income-tax authorities, after excluding, for this purpose, the period of experimental production. Thus, although the alumina plant came into production from 1942-43, we have written it down from 1944-45; as regards the ingot plant, it came into production from 1944-45, but we have written it down from 1945-46; and whereas the rolling mills came into production from 1945-46, we have written down the block from 1946-47. The rate allowed is 15 per cent. for plant and machinery and income-tax rates for other items, as in the case of the Company. Having regard to the fact that the alumina plant is being worked to the extent of 60 per cent. and the ingot plant 75 per cent. of capacity, we have allowed depreciation on 75 per cent. of the written-down blocks for alumina and aluminium. As regards the blocks for bauxite, paste and rolling mills, however, depreciation has been allowed on the full written-down value.

92. The following two statements give the cost of  
 Estimates of fair production and fair selling prices of  
 selling prices. ingots and sheets and circles as estimated by the Board for the periods 1950-51 and 1951-52:-

FAIR SELLING PRICE PER TON OF ALUMINIUM INGOT

| Period                                                  | 1950-51        | 1951-52        |
|---------------------------------------------------------|----------------|----------------|
| Estimated production                                    | 1500 tons      | 1500 tons      |
|                                                         | Rs.            | Rs.            |
| 1. Cost of production (excluding depreciation). . . . . | 1875.62        | 1838.37        |
| 2. Depreciation . . . . .                               | 352.43         | 304.70         |
| 3. Interest on working capital. .                       | 40.00          | 40.00          |
| 4. Return on block capital. . . .                       | 522.67         | 522.67         |
| Fair Selling Price                                      | <u>2790.72</u> | <u>2705.74</u> |

## FAIR SELLING PRICE PER TON OF ALUMINIUM SHEETS AND CIRCLES

| Period                                                     | 1950-51     | 1951-52     |
|------------------------------------------------------------|-------------|-------------|
| Estimated production equated to<br>20 Gauges               | 450<br>tons | 450<br>tons |
|                                                            | Rs.         | Rs.         |
| 1. Cost of production (excluding<br>depreciation). . . . . | 3884.87     | 3599.27     |
| 2. Depreciation . . . . .                                  | 106.24      | 92.38       |
| 3. Interest on working capital. .                          | 23.11       | 23.11       |
| 4. Return on block capital. . . .                          | 128.96      | 128.96      |
| Fair Selling Price                                         | 3942.98     | 3843.72     |

93. The Aluminium Corporation represented to us that a loan of Rs. 50 lakhs had been obtained from the Industrial Finance Corporation on the express condition that the Corporation should insure its plant and machinery and buildings and that a qualified accountant, approved by the Finance Corporation, should be appointed to look into the accounts. The Aluminium Corporation estimated that the additional expenditure, inclusive of interest on the loan, would be about Rs. 5 lakhs per annum and claimed that this additional amount should be included in the cost of production. We have examined this claim. The claim implies that until the new rolling mills and the third boiler, for which the loan is intended are put into commission, the sum of Rs. 5 lakhs should be loaded on to the costs of the existing production. As the additional expenditure on this account should properly be borne by the additional output to be produced with the installation of the new mills and the third boiler, we consider that this expenditure should, for the present, be treated as an item of deferred revenue expenditure, which should be recovered from future profits. We have not, therefore, included this amount in the present costs of production.

CHAPTER VI  
COMPARISON OF COSTS

94. In the previous two chapters we have given our introductory estimates of costs of production and fair selling prices of aluminium ingots, sheets and circles for the Company and the Corporation. In this chapter, we shall compare our present estimates with those which had been made by Government in 1949 for the purpose of the scheme of protection-cum-subsidy, which came into force from 15th May, 1949, and is still current. We shall also make a comparison between the costs of the two firms as estimated by us on the present occasion.

95. The following table gives the relative figures of costs and prices of ingots for the Company:

THE INDIAN ALUMINIUM COMPANY

|                    | Estimate on which the existing scheme of protection is based |             |             | Board's estimate |             |
|--------------------|--------------------------------------------------------------|-------------|-------------|------------------|-------------|
|                    | 1949-50                                                      | 1950-51     | 1951-52     | 1950-51          | 1951-52     |
|                    | Rs.                                                          | Rs.         | Rs.         | Rs.              | Rs.         |
| Cost of production | 2367                                                         | 2205        | 2050        | 2209             | 2114        |
| Return             | <u>233</u>                                                   | <u>220</u>  | <u>200</u>  | <u>674</u>       | <u>648</u>  |
| Fair Selling Price | <u>2600</u>                                                  | <u>2425</u> | <u>2250</u> | <u>2883</u>      | <u>2762</u> |

The figures given above show that our estimate of fair selling price for the Company for 1950-51 is higher by Rs. 458 per ton as compared with Government's estimate for 1950-51. It will, however, be noticed that the higher figure in our estimate is mainly due to the higher rate of return



we have allowed in determining the fair selling price. Government had adopted 10% profits on costs as recommended in the Board's previous report. We have already discussed the inadequacy of that rate of return and given our reasons for allowing a higher rate of return, in Chapter IV. As regards the estimates for 1951-52, our figure is higher than the Government estimate by Rs. 512 per ton, our figure for costs being higher by Rs. 64 and return by Rs. 448. We have examined the costs carefully and do not consider that they could be reduced below the figures we have arrived at.

96. In the following statement, a similar comparison has been made between the Government estimate (1949) and our estimate regarding the Corporation's cost and fair selling price for ingots:

**THE ALUMINIUM CORPORATION OF INDIA**  
**ALUMINIUM INGOTS**

|                       | Estimate on which the existing<br>scheme of protection is based |           |           | Board's estimate |         |
|-----------------------|-----------------------------------------------------------------|-----------|-----------|------------------|---------|
|                       | 1949 - 50                                                       | 1950 - 51 | 1951 - 52 | 1950-51          | 1951-52 |
|                       | Rs.                                                             | Rs.       | Rs.       | Rs.              | Rs.     |
| Cost of<br>production | 2820                                                            | 2860      | 2500      | 2228             | 2143    |
| Return                | 280                                                             | 265       | 250       | 563              | 563     |
| Fair Selling<br>Price | 3100                                                            | 2925      | 2750      | 2791             | 2706    |

It will be seen from the above figures that, in the case of the Corporation, our estimates of costs are substantially lower than Government's estimates. It will also be noticed that, notwithstanding the higher rate of return we have allowed, our estimates of fair selling price are lower than those of Government.

97. The following two statements give Government's estimates of costs for sheets and circles, estimates of costs and fair selling prices for sheets and circles for the Company and the Corporation, side by side with the Board's estimate for the same.

**THE INDIAN ALUMINIUM COMPANY**  
(Sheets and Circles)

|                                             | Basis on which subsidy was based |         |         | Board's estimate |      |         |      |
|---------------------------------------------|----------------------------------|---------|---------|------------------|------|---------|------|
|                                             | 1949-50                          | 1950-51 | 1951-52 | 1950-51          |      | 1951-52 |      |
|                                             | Rs.                              | Rs.     | Rs.     | Rs.              | Rs.  | Rs.     | Rs.  |
| Cost of Ingot (excluding melting loss).     | 2800                             | 2425    | 2250    | 2883             | 2883 | 2762    | 2762 |
| Railway freight                             | 120                              | 120     | 120     | 100              | 100  | 100     | 100  |
| Conversion cost (melting loss plus profit). | 1260                             | 1260    | 1260    | 876              | 858  | 870     | 846  |
| Fair Selling Price                          | 3980                             | 3805    | 3630    | 3859             | 3841 | 3732    | 3708 |

**THE ALUMINIUM CORPORATION OF INDIA**  
(Sheets and Circles)

|                                                      | Basis on which subsidy was based |         |         | Board's estimate |         |
|------------------------------------------------------|----------------------------------|---------|---------|------------------|---------|
|                                                      | 1949-50                          | 1950-51 | 1951-52 | 1950-51          | 1951-52 |
|                                                      | Rs.                              | Rs.     | Rs.     | Rs.              | Rs.     |
| Cost of Ingot (excluding melting loss)               | 3100                             | 2925    | 2750    | 2791             | 2708    |
| Conversion cost (including melting loss plus profit) | 1260                             | 1260    | 1260    | 1152             | 1138    |
| Fair Selling Price                                   | 4360                             | 4185    | 4010    | 3943             | 3844    |

It will be seen that the Board's estimate of costs and fair selling prices for the Company are higher and those for the Corporation lower than the corresponding Government estimates. The difference between the two sets of estimates,

it will be noticed, is mainly based on the difference in the estimates of costs for ingots.

98. We shall now compare the costs of the Company with those of the Corporation. We shall first take up the alumina cost. The following statement gives the alumina costs under three different heads - material cost, conversion cost and railway freight.

#### ALUMINA

##### COMPARISON OF COSTS PER TON OF ALUMINA AS ESTIMATED BY THE BOARD FOR THE TWO PRODUCERS

| Name of producer     | The Indian Aluminium Co. Ltd. |           | The Aluminium Corporation of India Ltd. |           |
|----------------------|-------------------------------|-----------|-----------------------------------------|-----------|
| Period               | 1950-51                       | 1951-52   | 1950-51                                 | 1951-52   |
| Estimated production | 4752 tons                     | 4950 tons | 3000 tons                               | 3000 tons |
|                      | Rs.                           | Rs.       | Rs.                                     | Rs.       |
| 1. Material cost     | 130.99                        | 130.99    | 137.02                                  | 137.02    |
| 2. Conversion cost   | 246.01                        | 239.71    | 187.60                                  | 183.40    |
| Total cost           | 377.00                        | 370.70    | 324.62                                  | 320.42    |
| 3. Railway freight   | 85.60                         | 85.60     | —                                       | —         |
| TOTAL                | 462.60                        | 456.30    | 324.62                                  | 320.42    |

It will be seen from the above statement that our estimate for the Company's cost of alumina is about Rs. 140 higher than the Corporation's cost. Railway freight is one of the main items responsible for this higher cost. We have already discussed in Chapter IV the reasons for the high conversion cost of alumina production at the works of the Company. The main items are power and fuel, repairs and maintenance, establishment, overheads and packing cost. In other words, in almost all other items, except raw material cost and labour cost, the Company shows a higher cost. As has been pointed out in Chapter IV, the Company could bring down the cost only if it could step up the

production of alumina which at present it cannot do, as its requirements of alumina are limited to the capacity for the production of ingots.

99. The following statement gives the ingot costs and fair selling prices of the Company and the Corporation:-

**ALUMINA INGOTS**  
COMPARISON OF COSTS OF PRODUCTION AND FAIR SELLING PRICES  
PER TON OF ALUMINIUM INGOT AS ESTIMATED BY THE BOARD  
FOR THE TWO PRODUCERS

| Name of producer -             | The Indian Aluminium Co. Ltd. |           | The Aluminium Corporation of India Ltd. |           |
|--------------------------------|-------------------------------|-----------|-----------------------------------------|-----------|
| Period                         | 1950-51                       | 1951-52   | 1950-51                                 | 1951-52   |
| Estimated production           | 2400 tons                     | 2500 tons | 1500 tons                               | 1500 tons |
|                                | Rs.                           | Rs.       | Rs.                                     | Rs.       |
| 1. Material cost               | 1192.52                       | 1179.03   | 920.02                                  | 910.42    |
| 2. Conversion cost             | 616.34                        | 601.41    | 955.60                                  | 927.95    |
| Total cost                     | 1808.86                       | 1780.44   | 1875.62                                 | 1838.37   |
| 3. Depreciation                | 400.20                        | 333.18    | 352.43                                  | 304.70    |
| 4. Interest on working capital | 40.00                         | 40.00     | 40.00                                   | 40.00     |
| 5. Return on block capital     | 633.56                        | 608.22    | 522.67                                  | 522.67    |
| Fair Selling Price             | 2882.62                       | 2761.84   | 2790.72                                 | 2705.74   |

Our estimate of cost of production of ingots for the Company is lower than that for the Corporation but this advantage is more than off-set by the higher amounts of profit and depreciation which are due to the Company on account of its block being of a proportionately higher value. It may be noted here that the Company's plant and machinery was installed later and its cost was appreciably higher than that of the Corporation.

100. The following statement gives the estimated cost and fair selling price of sheets and circles produced by the Company and the cost and fair selling price of sheets and

circles taken together produced by the Corporation. In Chapter V, we have pointed out that it was not possible to work out the costs of sheets and circles of the Corporation separately. As such, the Corporation's costs are not strictly comparable with those of the Company. It will, however, be seen that the Company's costs of both sheets and circles are lower than the Corporation's costs of sheets and circles taken together. The difference is due to the higher conversion cost and the higher incidence of depreciation and return in the case of the Corporation, which in turn, is due to its rolling mills being much too small.

COMPARISON OF COSTS OF PRODUCTION AND FAIR SELLING PRICES  
PER TON OF ALUMINIUM SHEETS AND CIRCLES  
AS ESTIMATED BY THE BOARD FOR THE TWO PRODUCERS

| Name of producer                                                     | The Indian Aluminium Co., Ltd. |          |                   |           | The Aluminium Corporation of India Ltd. |          |
|----------------------------------------------------------------------|--------------------------------|----------|-------------------|-----------|-----------------------------------------|----------|
| Name of product                                                      | Aluminium Sheets               |          | Aluminium Circles |           | Aluminium Sheets & Circles              |          |
| Period                                                               | 1950-51                        | 1951-52  | 1950-51           | 1951-52   | 1950-51                                 | 1951-52  |
| Estimated production equated to 20 gauge                             | 410 tons                       | 410 tons | 2177 tons         | 2177 tons | 450 tons                                | 450 tons |
|                                                                      | Rs.                            | Rs.      | Rs.               | Rs.       | Rs.                                     | Rs.      |
| 1. Metal (Aluminium Ingot) cost<br>(Railway freight + Melting loss). | 2997.13                        | 2875.75  | 2997.13           | 2875.75   | 2804.87                                 | 2719.27  |
| 2. Conversion cost*                                                  | 698.55                         | 698.55   | 637.32            | 637.32    | 880.00                                  | 880.00   |
| Total                                                                | 3695.68                        | 3574.30  | 3634.45           | 3513.07   | 3684.87                                 | 3599.27  |
| 3. Depreciation                                                      | 40.15                          | 34.61    | 84.00             | 72.41     | 108.24                                  | 92.38    |
| 4. Interest on working capital.                                      | 23.44                          | 23.36    | 23.33             | 23.21     | 23.11                                   | 23.11    |
| 5. Return on Block capital.                                          | 99.72                          | 99.91    | 99.25             | 99.26     | 128.98                                  | 128.98   |
| Fair Selling Price                                                   | 3868.99                        | 3732.18  | 3841.03           | 3707.95   | 3942.98                                 | 3843.72  |
| or say                                                               | 3 859                          | 3 732    | 3 841             | 3 708     | 3 943                                   | 3 844    |

\*In the case of the Company, the figure includes the increase in labour charges on account of the Industrial Tribunal's Award made in September, 1950.

## CHAPTER VII

## THE AMOUNT AND METHOD OF PROTECTION

101. Under the terms of reference, we have to examine whether the existing scheme of protection-cum-subsidy for the aluminium industry requires any modification after the first year of its working, i.e., after 15th May, 1950. For this purpose, we have to compare the fair selling prices of the indigenous ingots, sheets and circles with the landed costs of the imported articles. In Chapters IV and V, we have given our estimates of fair selling prices for ingots, sheets and circles produced by the Indian Aluminium Company and the Aluminium Corporation of India. We shall now discuss the c.i.f. prices and landed costs of imports.

(i) *Ingots.* - The main source of imports of aluminium ingots is Canada. In May, 1949, when the scheme of protection-cum-subsidy was adopted, the c.i.f. price of ingots was taken at Rs. 1,275 per ton and the landed cost, ex-duty, at Rs. 1,230 per ton. After the devaluation of the pound sterling and the Indian rupee in September, 1949, the c.i.f. price of Canadian ingots rose to Rs. 1,645 per ton and the landed cost, ex-duty, to Rs. 1,665 per ton, and thereafter continued to be fairly stable at that level until October, 1950. The latest position regarding the c.i.f. price of Canadian ingots, 99.5 per cent. minimum purity, has been stated by Aluminium Union Ltd, Calcutta, one of the principal importers of aluminium, in its letter dated 27th October, 1950, to be as follows:-

|                                               |                          |
|-----------------------------------------------|--------------------------|
| Present price f.a.s. Canadian )               | 17.5 Canadian cents per  |
| Atlantic port )                               | lb. = Rs. 1,797 per ton. |
| (Exchange rate, Canadian \$100.00 = Rs. 457). |                          |
| Estimated C.i.f. price, main )                | Rs. 1,894 per long ton.  |
| Indian ports. )                               |                          |

Adding Rs. 20 for landing and clearing charges, the landed cost, ex-duty, comes to Rs. 1,914 per ton. We have accordingly adopted these figures for purposes of comparison with the fair selling price of the indigenous ingots. It will be seen that, since May, 1949, when the scheme of protection came into force, the c.i.f. price of ingots has gone up by Rs. 619 per ton.

(ii) *Sheets.* The main source of imports of sheets and circles is the U.K., which supplements her internal production of ingots by imports of ingots from Canada, for manufacturing sheets and circles. Consequently, the c.i.f. prices of imported sheets and circles from the U.K. follow the c.i.f. prices of imports of Canadian ingots into the U.K. For purposes of the scheme of protection adopted on 15th May, 1949, the fair selling price was determined for indigenous sheets and circles taken together, and, for comparison with this, the c.i.f. price of imported circles alone was taken. The c.i.f. price was Rs. 2,514 per ton and the landed cost, ex-duty, Rs. 2,520 per ton. After the devaluation of the pound sterling and the Indian rupee in September, 1949, the c.i.f. price of sheets 20 gauge, 99 per cent. commercial purity, imported from the U.K., rose to Rs. 3,016 per ton and the landed cost, ex-duty, to Rs. 3,036 per ton, and these rates were fairly stable until October, 1950. The latest c.i.f. price of imports of sheets from the U.K., as given by Aluminium Union Ltd., Calcutta, is Rs. 3,103 per ton. Adding Rs. 20 for landing and clearing charges, the landed cost, ex-duty, comes to Rs. 3,123 per ton of sheets.

(iii) *Circles.*— The c.i.f. price of circles, 20 gauge, 90 per cent. commercial purity, imported from the U.K., which was taken at Rs. 2,614 per ton for purposes of determining the quantum of protection in May, 1949, rose to Rs. 3,103 after the devaluation of September, 1949, and remained at that level until October 1950. The latest c.i.f. price of circles imported from the U.K., as given by Aluminium Union Ltd., in October 1950, is Rs. 3,222 per ton.

Adding Rs. 20 for landing and clearing charges, the landed cost, ex-duty, comes to Rs. 3,242 per ton of circles. It will be seen that, since the grant of protection in May, 1949, the c.i.f. price of circles has gone up by Rs. 608 per ton.

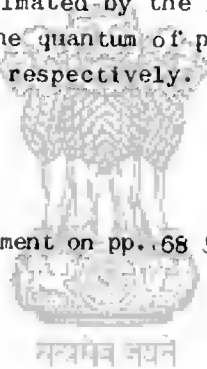
102. Since the c.i.f. prices and landed costs show a marked increase in October, 1950, we have divided the period from 15th May, 1950 to 14th May, 1951, into two sub-periods, viz., (i) from 15th May, 1950 to 31st October, 1950, and (ii) from 1st November, 1950 to 14th May, 1951. The period from 15th May, 1951 to 14th May, 1952, will be period (iii). The following statement gives the comparison of the fair selling prices as estimated by the Board and the landed costs, ex-duty, and the quantum of protection indicated, for the three periods respectively.

Comparison between  
fair selling price  
and landed cost.

marked increase in October, 1950, we have  
divided the period from 15th May, 1950 to  
14th May, 1951, into two sub-periods, viz.,

(i) from 15th May, 1950 to 31st October, 1950, and (ii) from  
1st November, 1950 to 14th May, 1951. The period from  
15th May, 1951 to 14th May, 1952, will be period (iii).  
The following statement gives the comparison of the fair  
selling prices as estimated by the Board and the landed  
costs, ex-duty, and the quantum of protection indicated,  
for the three periods respectively.

(Statement on pp. 68 & 69)





STATEMENT :

(a) Statement showing the c.i.f. prices, landed costs and fair selling prices of aluminium ingots and the measure of duty required

| Name of product                                                               | Aluminium Ingots                 |                                  |                                  |                                   |                                  |                                  |                                  |                                  |                                  |                                  |
|-------------------------------------------------------------------------------|----------------------------------|----------------------------------|----------------------------------|-----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
|                                                                               | Indian Aluminium Co., Ltd.       |                                  |                                  |                                   |                                  | Aluminium Corporation            |                                  |                                  |                                  |                                  |
| Period                                                                        | 6th May, '50/<br>31st Oct., '50. | 1st Nov., '50/<br>14th May, '51. | 15th May, '51/<br>14th May, '52. | 16th May, '51/<br>31st Oct., '50. | 1st Nov., '50/<br>14th May, '51. | 16th May, '51/<br>14th May, '52. | 1st Nov., '50/<br>14th May, '51. | 16th May, '51/<br>14th May, '52. | 1st Nov., '50/<br>14th May, '51. | 16th May, '51/<br>14th May, '52. |
|                                                                               | Rs.                              | Rs.                              | Rs.                              | Rs.                               | Rs.                              | Rs.                              | Rs.                              | Rs.                              | Rs.                              | Rs.                              |
| 1. C.I.F.                                                                     | 1,645                            | 1,894                            | 1,894                            | 1,894                             | 1,645                            | 1,894                            | 1,645                            | 1,894                            | 1,645                            | 1,894                            |
| 2. Clearing Charges                                                           | 20                               | 20                               | 20                               | 20                                | 20                               | 20                               | 20                               | 20                               | 20                               | 20                               |
| 3. Landed Cost ex-duty (1+2)                                                  | 1,665                            | 1,914                            | 1,914                            | 1,914                             | 1,665                            | 1,914                            | 1,665                            | 1,914                            | 1,665                            | 1,914                            |
| 4. Fair Selling Price of<br>Indian Manufacture.                               | 2,983                            | 2,893                            | 2,762                            | 2,762                             | 2,791                            | 2,791                            | 2,791                            | 2,791                            | 2,791                            | 2,791                            |
| 5. Difference between Fair<br>Selling Price and Landed<br>Cost ex-duty (4-3). | 1,218                            | 909                              | 948                              | 948                               | 1,126                            | 877                              | 1,126                            | 877                              | 1,126                            | 877                              |
| 6. Duty indicated on C.I.F.<br>(item 5 expressed as<br>percentage of item 1). | 73.96%                           | 51.16%                           | 44.77%                           | 44.77%                            | 68.45%                           | 46.30%                           | 68.45%                           | 46.30%                           | 68.45%                           | 46.30%                           |

(b) Statement showing c.i.f. prices, landed costs and fair selling prices of aluminium sheets and circles and the measure of duty required.

| Name of Product                                                         | Aluminium Sheets               |        |        |                                |        |        | Aluminium Circles              |        |        |                                |        |        |
|-------------------------------------------------------------------------|--------------------------------|--------|--------|--------------------------------|--------|--------|--------------------------------|--------|--------|--------------------------------|--------|--------|
|                                                                         | Indian Aluminium Co.           |        |        | Aluminium Corporation          |        |        | Indian Aluminium Co.           |        |        | Aluminium Corporation          |        |        |
| Name of Producer                                                        | 15th May '50 to 31st Oct. '50. |        |        | 15th May '50 to 31st Oct. '50. |        |        | 15th May '50 to 31st Oct. '50. |        |        | 15th May '50 to 31st Oct. '50. |        |        |
|                                                                         | Rs.                            | P.     | Rs.    | Rs.                            | P.     | Rs.    | Rs.                            | P.     | Rs.    | Rs.                            | P.     | Rs.    |
| 1. C.I.F.                                                               | 3,016                          | 3,103  | 3,103  | 3,016                          | 3,103  | 3,103  | 3,103                          | 3,222  | 3,103  | 3,222                          | 3,222  | 3,222  |
| 2. Clearing Charges                                                     | 20                             | 20     | 20     | 20                             | 20     | 20     | 20                             | 20     | 20     | 20                             | 20     | 20     |
| 3. Landed Cost ex-duty (1+2)                                            | 3,036                          | 3,123  | 3,123  | 3,036                          | 3,123  | 3,123  | 3,123                          | 3,242  | 3,123  | 3,242                          | 3,242  | 3,242  |
| 4. Fair Selling Price of Indian Manufacture.                            | 3,859                          | 3,859  | 3,732  | 3,943                          | 3,943  | 3,844  | 3,841                          | 3,841  | 3,708  | 3,943                          | 3,943  | 3,844  |
| 5. Difference between Fair Selling Price and Landed Cost ex-duty (4-3). | 823                            | 736    | 608    | 907                            | 820    | 721    | 718                            | 599    | 466    | 820                            | 701    | 602    |
| 6. Duty indicated on C.I.F. (item 5 expressed as percentage of item 1). | 27.28%                         | 23.72% | 19.63% | 30.07%                         | 26.43% | 23.24% | 23.14%                         | 18.59% | 14.46% | 26.43%                         | 21.76% | 18.68% |

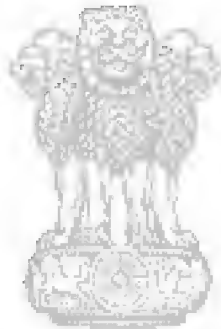
(i) *Ingots.*- It will be seen from the figures in the above statement that the quantum of protection indicated for ingots produced by the Company is Rs. 1,218 per ton for period (i), Rs. 969 for period (ii) and Rs. 848 for period (iii). The quantum of protection required for the Corporation's ingots is Rs. 1,126 per ton for period (i), Rs. 877 for period (ii) and Rs. 792 for period (iii). At the time of the previous inquiry (1946), the quantum of protection had been estimated at Rs. 1,434 per ton for the Company and Rs. 1,465 per ton for the Corporation, for the year 1946-47. The Board had expected that the cost of production would be reduced in the next two years and, accordingly, provided for diminishing rates of protection. When the scheme of protection was actually introduced in May, 1949, the quantum of protection found necessary for ingots was Rs. 1,310 per ton for 1949-50, Rs. 1,135 per ton for 1950-51, and Rs. 960 per ton for 1951-52, in the case of the Company; and Rs. 1,810 per ton for 1949-50, Rs. 1,635 per ton for 1950-51, and Rs. 1,460 per ton for 1951-52, in the case of the Corporation. It will be seen from this that the quantum of protection for ingots that we consider necessary now is considerably lower than what was anticipated when the scheme of protection was introduced. This reduction in the quantum is mainly due to the increase in the c.i.f. price of ingots which has gone up by Rs. 619 per ton.

(ii) *Sheets and circles.*- In the case of the Company, the quantum of protection indicated for the three periods respectively is Rs. 823, Rs. 736 and Rs. 609 per ton for sheets and Rs. 719, Rs. 599 and Rs. 466 per ton for circles. In the case of the Corporation, the quantum of protection indicated respectively for the three periods is Rs. 907, Rs. 820 and Rs. 721 per ton of sheets; and Rs. 820, Rs. 701 and Rs. 602 per ton of circles. When the scheme of protection was introduced in May, 1949, the quantum of protection for sheets and circles was not estimated separately. The quantum of protection for sheets and circles taken together was Rs. 1,351 per ton in 1949-50, Rs. 1,176 per ton in

1950-51 and Rs. 1,001 per ton in 1951-52, in the case of the Company; it was Rs. 1,731 per ton in 1949-50, Rs. 1,556 per ton in 1950-51 and Rs. 1,381 per ton in 1951-52, in the case of the Corporation.

(iii) The following statement gives the rates of duty indicated for ingots and sheets and circles when the scheme of protection was introduced and the rates required on the basis of the Board's estimates for the next two years:-

(Statement on the next page)



सत्यमेव जयते



103. Before we proceed to formulate a scheme of protection best suited to the industry under existing circumstances, we have to consider what should be a reasonable level of prices for aluminium ingots, sheets and circles, from the point of view of consumers. Representations have been made to us that the superimposition of additional specific duties on the 30 per cent. *ad valorem* duty on ingots, sheets and circles has placed an undue burden on the consumers, thereby reducing the demand below what it would otherwise have been. We may examine how far this contention is justified. The scheme of protection involving the imposition of additional specific duties came into force on 15th May, 1949. Imports of aluminium products in 1948-49 (that is, in the year preceding the adoption of additional duties) amounted to 9,453 tons. In the following year of 1949-50 (that is, in the year following the imposition of additional duties), the imports decreased to 6,673 tons, that is, by 2,780 tons; the imports of ingots decreased from 330 tons to 15 tons, those of sheets from 2,666 tons to 1,267 tons, and those of other aluminium products from 2,318 tons to 530 tons; imports of circles, however, increased from 4,743 tons to 4,861 tons. In this connection, it may be noted that, from July, 1948 to June, 1950, imports of aluminium ingots and sheets and circles and other products were subject to monetary ceilings both from dollar and sterling areas. Moreover, while the duty on ingots was increased by Rs. 328 per ton and that on sheets and circles by Rs. 121 per ton, as a result of devaluation in September, 1949, the c.i.f. price of ingots rose by Rs. 370 per ton, that of sheets by about Rs. 400 per ton, and that of circles by about Rs. 500 per ton. Recently, on account of the adoption of stock-piling and rearmament programmes in the U.S.A. and other countries, the supplies available for export from those countries have dwindled and the c.i.f. price of ingots has gone up by a further Rs. 250 per ton, and that of sheets and circles by a further Rs. 100 per ton. It will thus be

seen that several other factors, viz., import restriction, the rise in prices due to devaluation, a reduction in the supplies of aluminium for civilian consumption on account of stockpiling and rearmament requirements, may have been responsible for a reduction in the volume of imports of aluminium in the country. It would not, therefore, be correct to say that the reduction was primarily caused by the imposition of the additional duties. This question was discussed at length with the representatives of the various aluminium interests at the public inquiry. The manufacturers of virgin aluminium in the country, viz., the Indian Aluminium Company and the Aluminium Corporation of India, as well as some of the principal importers of ingots, sheets and circles, expressed the view that the effect of the duty on the present price levels of aluminium products had not been serious. They also gave it as their considered opinion that the consumption of aluminium in the country had been reduced mainly owing to import control in the past and to non-availability of supplies in the recent months, and only to a minor extent, if at all, on account of the additional duties. Moreover, according to them, the current price level of aluminium ingots, sheets and circles was not likely to affect the demand.

104. The view that the current level of aluminium prices is not unduly high for the consumers is also supported by a comparison of prices of certain popular categories of aluminiumware with those of brassware. In this connection, it may be noted that, while aluminium is subject to a substantial duty, copper and zinc are being imported free of duty since March, 1946. Nevertheless an examination of the comparative prices shows that aluminiumware is still substantially cheaper than brassware. Even allowing for the shorter life of aluminiumware, the demand for it is bound to remain high for large sections of people. A statement of comparative prices of certain representative categories of aluminiumware and brassware, as furnished by Jcewanlal (1929), Ltd., is given below:-

## STATEMENT III

*Comparative prices of aluminiumware and brassware*

| Name of article | Aluminiumware       |                    | Brassware           |                    |
|-----------------|---------------------|--------------------|---------------------|--------------------|
|                 | Dia. size<br>inches | Value per<br>piece | Dia. size<br>inches | Value per<br>piece |
|                 |                     | Rs. As. Ps.        |                     | Rs. As. Ps.        |
| Wash basin      | 9                   | 0 12 0             | 9                   | 2 4 0              |
| Eating tray     | 10                  | 0 12 0             | 10                  | 2 0 0              |
| Tiffin carriers | 4½/4                | 2 13 0             | 4½/4                | 6 11 0             |
| Milk pots       | 4½                  | 1 1 0              | 4½                  | 2 14 9             |
| Degchie - W/C.  | 6                   | 0 15 0             | 6                   | 2 10 0             |

105. The representatives of rolling mills, other than the Aluminium Company and the Aluminium Corporation, as well as those of utensil makers and various other consuming interests, also suggested that the consumption of aluminium in the country should be encouraged in preference to that of other non-ferrous metals such as copper, zinc, brass, etc., because of the many special qualities of aluminium for domestic and industrial uses and also because of India's superior natural advantages for the production of aluminium as compared with those for the other non-ferrous metals. They, therefore, requested that the duty on aluminium ingots should, if possible, be altogether abolished, as in the case of other non-ferrous (virgin) metals like copper, zinc, lead, etc., or at least reduced to 2½ or 3 per cent. with a view to decreasing its price and encouraging its consumption. This view was also placed before us with considerable emphasis by the eminent economist, Shri Manu Subedar, who has also had the advantage of possessing intimate knowledge of the economics of the aluminium industry. Shri Subedar had submitted a short memorandum on the subject to the Honourable Minister for Finance and another memorandum to the Secretary, Ministry of Commerce, both of which were forwarded to the Board for consideration. Shri Subedar also gave oral evidence before it and favoured us with



an exposition of his thesis. To start with, Shri Subedar reminded us that it would be in accordance with the theory and practice of scientific tariff-working, if imports of raw materials were duty-free or subject to a very small duty of, say,  $2\frac{1}{2}$  per cent. intermediate products, such as circles and sheets, subject to an import duty of, say, 15 per cent. and finished products subject to a higher duty according to circumstances. Shri Subedar further suggested that the manufacture of aluminium ingots, which had to be protected for strategic reasons, should be assisted mainly by means of a subsidy and that the amount required for the payment of such a subsidy should be raised by means of a  $2\frac{1}{2}$  per cent. duty on all non-ferrous (virgin) metals. And he thought that, if the duties on aluminium ingots and sheets and circles were substantially reduced as proposed by him, the price of aluminium utensils would be reduced to the benefit of the workers and middle classes; that the consumption of aluminium in the country would expand rapidly so as to create a large home market which was necessary to support larger and more economic units of aluminium production that would be established in the country in future and that it would increase the import of more ingots for rolling more sheets and circles, which would create more employment in the country and, incidentally, enable the Indian rolling mills to secure the large profits from the manufacture of sheets and circles which at present accrued to the English rolling mills. A somewhat similar point of view was also put forward by the D.G.I. & S. and the Non-ferrous Metal Manufacturers' Association.

106. We have given our most careful consideration to the proposals made by Shri Subedar as well as by several representatives of the rolling mills and the utensils manufacturers. There is no doubt that it would be in the interest of the country in general and that of the aluminium industry in particular, to obtain imports of ingots in preference to those of sheets and circles, as the cost of fabrication in this country is less than the

margin between the c.i.f. prices of ingots and those of sheets and circles. Thus, for instance, while the margin between the c.i.f. prices of imported ingots and sheets is Rs. 1,209 per ton, the cost of fabricating sheets in India is Rs. 976 per ton; similarly, while the margin in the case of the imported ingots and circles is Rs. 1,328 per ton, the cost of fabrication of circles in India is Rs. 958. In this connection, however, it may be pointed out that in order to facilitate imports of ingots, Government have already removed the restriction on imports of ingots by placing all such imports, from dollar as well as sterling areas on an Open General Licence by Notification No. 19-ITC/50, dated 5th August, 1950. As regards the proposal for the abolition or a drastic reduction of the duty on ingots, such a step would be justified only if there was a possibility of substantially larger supplies of ingots becoming available from Canada, the U.S.A. and other countries. It is, however, common knowledge that, owing to the very large demand for stock-piling and rearmament in Western countries, the supplies currently available for civilian consumption have been drastically cut down. As serious shortage of world supplies of aluminium being thus unavoidable for some time, the prices of aluminium products are not likely to be reduced as a result of the reduction in the import duty on ingots. There is thus no possibility of the consumers of aluminium products receiving the benefit of the proposed measure to any significant extent. The position would have been different if it had been practicable to enforce price control over aluminium products. Past experience, however, does not afford much promise of success in this case. As regards the proposal to raise the amount required for the payment of subsidy by means of a small duty of 2½ to 3 per cent. on other non-ferrous (virgin) metals, it may be pointed out that these metals have been allowed to be imported free of duty in order to assist the development of secondary non-ferrous metals industries in the country which have been given protection as a result of a tariff inquiry

and that, consequently, it would not be proper to withdraw that advantage from such industries without examining its possible effect on them. Moreover, these other non-ferrous metals, such as copper, zinc, tin and lead, being also strategic metals, their supplies are also likely to be inadequate to meet the requirements of the secondary non-ferrous metals industries in the country. It would, therefore, follow that an additional burden of duty, however small, should not be imposed on them.

107. It has been suggested that, since the object of protection in this case is to encourage the production of virgin aluminium and, also, since sheets and circles do not require any substantive protection, the scheme of protection-cum-subsidy should be related basically to the production of ingots only. This suggestion implies that the profits obtained from the sale of sheets and circles by the Company and the Corporation should not be taken into account in determining the quantum of subsidy required for ingots. In this connection, it has been argued that, if the measure of protection-cum-subsidy for ingots taken by itself is not sufficient to cover fully the difference between the fair selling price of indigenous ingots and the landed cost, ex-duty, of the imported article, the manufacturers would have little incentive to continue the production of ingots, because they would be able to earn more profits by concentrating on the rolling of sheets and circles from the imported ingots, in which case the very purpose of protection would be defeated. Theoretically speaking, there is force in this contention. But, in considering a suitable scheme of protection for the industry, we have to take into account the limiting factors of the present situation. In the first place, owing to the impossibility of obtaining a larger quantity of electrical power, it would not be possible to increase the production of aluminium ingots in the next three or four years even if there were the incentive of a higher scale of protection for ingots. Secondly, as, owing to the present small scale

of production, the costs of aluminium ingots are unduly high, the amount required to subsidise ingots fully on the basis of the difference between their cost of production and the landed cost of imports, would be excessive. We, therefore, consider it reasonable that in the existing circumstances, the profits made by the manufacturers on the sale of sheets and circles should be taken into account in determining the amount of subsidy, if any, required by them. Our recommendations regarding the payment of subsidy are, therefore, based upon this principle. As the Company sells practically all its output in the shape of sheets and circles, we have examined the question of the amount of subsidy payable to the Company only in relation to sheets and circles. In the case of the Corporation, the rolling mill has only a capacity for producing 450 tons of sheets and circles, for which 453 tons of ingots are required at the rate of about 1.005 tons of ingots per ton of sheets and circles. We have, therefore, made our estimate of the amount of subsidy payable to the Corporation on the basis of 450 tons of sheets and circles and 1,047 (i.e., 1,500-453) tons of ingots. Out of 450 tons of sheets and circles, 25 per cent. should be taken as sheets and 75 per cent. as circles, for this purpose.

108. We now proceed to estimate the amount of subsidy payable to the Company and the Corporation, respectively, in the three periods specified in paragraph 106 above, viz., (i) from 15th May, 1950 to 31st October, 1950; (ii) 1st November, 1950 to 14th May, 1951; and (iii) 15th May, 1951 to 14th May, 1952.

Period (i) 15th May 1950 to 31st October 1950:-

(A) THE INDIAN ALUMINIUM CO., LTD.  
(Sheets and Circles)

|                                                                | Sheets<br>Per ton<br>Rs. | Circles<br>Per ton<br>Rs. |
|----------------------------------------------------------------|--------------------------|---------------------------|
| (a) Fair Selling Price. . . . .                                | 3,859                    | 3,841                     |
| (b) C.I.F. price. . . . .                                      | 3,016                    | 3,103                     |
| (c) Customs duty (at 30% plus Rs. 46) . . .                    | 951                      | 977                       |
| (d) Landing and clearing charges. . . . .                      | 20                       | 20                        |
| (e) Landed cost with duty . . . . .                            | 3,987                    | 4,100                     |
| (f) Excess of landed cost over fair selling<br>price . . . . . | 128                      | 259                       |

These figures show that, on the basis of landed costs and estimated fair selling prices for this period, the Company should have obtained a surplus over the fair selling prices to the extent of Rs. 128 per ton of sheets and Rs. 259 per ton of circles sold. On this basis, therefore, no subsidy is payable to the Company on the sheets and circles sold by it during the period. It may be noted that the rate of subsidy on sheets and circles produced by the Company had been fixed under the original scheme of 15th May, 1949, at Rs. 230 per ton for the period from 15th May, 1950 to 14th May, 1951. Subsequently, however, on account of an increase in the c.i.f. prices and landed costs of sheets and circles, the rate of subsidy was reduced to Rs. 115 per ton of sheets and circles and it is at this rate that the subsidy was to be paid to the Company on a provisional basis for the period in question. As, on the basis of our estimates, no subsidy is payable to the Company on the sales of sheets and circles during the period, any amounts that Government may have already paid for the period should be refunded by the Company.

## (B) THE ALUMINIUM CORPORATION OF INDIA, LTD.

(i) *Ingots*

|                                                                              | Ingots<br>Per ton<br>Rs. |
|------------------------------------------------------------------------------|--------------------------|
| (a) Fair selling price . . . . .                                             | 2,791                    |
| (b) C.I.F. price . . . . .                                                   | 1,645                    |
| (c) Customs duty (at 30% plus Rs. 237) . . . . .                             | 731                      |
| (d) Landing and clearing charges . . . . .                                   | 20                       |
| (e) Landed cost with duty . . . . .                                          | 2,396                    |
| (f) Excess of fair selling price over the landed cost<br>with duty . . . . . | 395                      |

On the basis of these figures, the loss on the sale of ingots would be Rs. 395 per ton.

(ii) *Sheets and Circles*

|                                                                              | Sheets<br>Per ton<br>Rs. | Circles<br>Per ton<br>Rs. |
|------------------------------------------------------------------------------|--------------------------|---------------------------|
| (a) Fair selling price . . . . .                                             | 3,943                    | 3,943                     |
| (b) C.I.F. price . . . . .                                                   | 3,016                    | 3,103                     |
| (c) Customs duty (at 30% plus Rs. 46) . . . . .                              | 951                      | 977                       |
| (d) Landing and clearing charges . . . . .                                   | 20                       | 20                        |
| (e) Landed cost with duty . . . . .                                          | 3,987                    | 4,100                     |
| (f) Excess of landed cost with duty over the<br>fair selling price . . . . . | 44                       | 157                       |

On the basis of these figures, the Corporation should have obtained a surplus over the fair selling prices to the extent of Rs. 44 per ton of sheets and Rs. 157 per ton of circles sold. The rate of subsidy payable to the Corporation on sheets and circles had been fixed under the original scheme of protection of 15th May, 1949, at Rs. 610 per ton of sheets and circles. This was subsequently reduced to Rs. 160 per ton of sheets and circles. On the basis of our estimates, however, no subsidy is payable to the Corporation on the sale of sheets and circles during the above period.

On the contrary, surplus receipts from the sale of sheets and circles, as estimated by us, should be taken into account in assessing the net loss over the sale of its entire output (i.e., ingots, sheets and circles taken together) for purposes of determining the amount of subsidy.

Period (ii): 1st November, 1950 to 14th May, 1951:-

(A) THE INDIAN ALUMINIUM CO., LTD.

(Sheets and Circles)

|                                                                              | Sheets<br>Per ton<br>Rs. | Circles<br>Per ton<br>Rs. |
|------------------------------------------------------------------------------|--------------------------|---------------------------|
| (a) Fair selling price . . . . .                                             | 3,859                    | 3,841                     |
| (b) C.I.F. price . . . . .                                                   | 3,103                    | 3,222                     |
| (c) Customs duty (at 30% plus Rs. 46) . . . .                                | 977                      | 1,013                     |
| (d) Landing and clearing charges . . . . .                                   | 20                       | 20                        |
| (e) Landed cost with duty . . . . .                                          | 4,100                    | 4,255                     |
| (f) Excess of landed cost with duty over the<br>fair selling price . . . . . | 241                      | 414                       |

On the basis of these figures, the Company should obtain a surplus over the fair selling prices to the extent of Rs. 241 per ton of sheets and Rs. 414 per ton of circles sold. The rate of subsidy payable on a provisional basis was Rs. 115 per ton of sheets and circles. On the basis of our figures, no subsidy on sales of sheets and circles is payable to the Company for this period. If any amounts have been already paid on a provisional basis, the necessary refund should be made by the Company.

## (B) THE ALUMINIUM CORPORATION OF INDIA, LTD.

## (i) Ingots

|                                                                              | Ingots<br>Per ton<br>Rs. |
|------------------------------------------------------------------------------|--------------------------|
| (a) Fair selling price . . . . .                                             | 2,791                    |
| (b) C.I.F. price . . . . .                                                   | 1,894                    |
| (c) Customs duty (at 30% plus Rs. 237) . . . . .                             | 805                      |
| (d) Landing and clearing charges . . . . .                                   | 20                       |
| (e) Landed cost with duty . . . . .                                          | 2,719                    |
| (f) Excess of fair selling price over the landed<br>cost with duty . . . . . | 72                       |

On the basis of these figures, the loss on the sale of ingots would be Rs. 72 per ton.

## (ii) Sheets and Circles

|                                                                              | Sheets<br>Per ton<br>Rs. | Circles<br>Per ton<br>Rs. |
|------------------------------------------------------------------------------|--------------------------|---------------------------|
| (a) Fair selling price . . . . .                                             | 3,943                    | 3,943                     |
| (b) C.I.F. price . . . . .                                                   | 3,103                    | 3,222                     |
| (c) Customs duty (at 30% plus Rs. 46) . . . . .                              | 977                      | 1,013                     |
| (d) Landing and clearing charges . . . . .                                   | 20                       | 20                        |
| (e) Landed cost with duty . . . . .                                          | 4,100                    | 4,255                     |
| (f) Excess of landed cost with duty over<br>the fair selling price . . . . . | 157                      | 312                       |

From these figures, it will be seen that, during this period, the Corporation should be able to obtain a surplus over the fair selling price to the extent of Rs. 157 per ton of sheets and Rs. 312 per ton of circles sold. The rate of subsidy provisionally fixed was Rs. 160 per ton of sheets and circles. On the basis of our present estimate, however, no subsidy is payable to the Corporation on the sale of sheets and circles. On the contrary, the surplus receipts from the sale of sheets and circles, as estimated by us, should be taken into account in assessing the net loss over the sale of its entire output (i.e., ingots, sheets and



circles taken together) for purposes of determining the amount of subsidy.

Period (iii): 15th May 1951 to 14th May, 1952:-

(A) THE INDIAN ALUMINIUM CO., LTD.

(Sheets and Circles)

|                                                                              | Sheets  | Circles |
|------------------------------------------------------------------------------|---------|---------|
|                                                                              | Per ton | Per ton |
|                                                                              | Rs.     | Rs.     |
| (a) Fair selling price . . . . .                                             | 3,732   | 3,708   |
| (b) C.I.F. price . . . . .                                                   | 3,103   | 3,222   |
| (c) Customs duty (at 30%) . . . . .                                          | 931     | 967     |
| (d) Landing and clearing charges . . . . .                                   | 20      | 20      |
| (e) Landed cost with duty . . . . .                                          | 4,054   | 4,209   |
| (f) Excess of landed cost with duty over the<br>fair selling price . . . . . | 322     | 501     |

On the basis of these figures, it will be seen that no subsidy on sales of sheets and circles is payable to the Company for the above period.

(B) THE ALUMINIUM CORPORATION OF INDIA, LTD.

(i) Ingots

|                                                                              | Ingots  |
|------------------------------------------------------------------------------|---------|
|                                                                              | Per ton |
|                                                                              | Rs.     |
| (a) Fair selling price . . . . .                                             | 2,706   |
| (b) C.I.F. price . . . . .                                                   | 1,894   |
| (c) Customs duty (at 30% plus Rs. 146) . . . . .                             | 714     |
| (d) Landing and clearing charges . . . . .                                   | 20      |
| (e) Landed cost with duty . . . . .                                          | 2,628   |
| (f) Excess of fair selling price over the landed<br>cost with duty . . . . . | 78      |

On the basis of these figures, the loss on the sale of ingots would be Rs. 78 per ton.

(ii) *Sheets and Circles*

|                                                                              | Sheets  | Circles |
|------------------------------------------------------------------------------|---------|---------|
|                                                                              | Per ton | Per ton |
|                                                                              | Rs.     | Rs.     |
| (a) Fair selling price . . . . .                                             | 3,844   | 3,844   |
| (b) C.I.F. price . . . . .                                                   | 3,103   | 3,222   |
| (c) Customs duty (at 30%) . . . . .                                          | 931     | 967     |
| (d) Landing and clearing charges . . . . .                                   | 20      | 20      |
| (e) Landed cost with duty . . . . .                                          | 4,054   | 4,209   |
| (f) Excess of landed cost with duty over<br>the fair selling price . . . . . | 210     | 365     |

From these figures, it will be seen that the excess of the landed cost over the fair selling price will amount to Rs. 210 per ton of sheets and Rs. 365 per ton of circles. The Corporation should, therefore, earn a surplus over the fair selling price on the sale of sheets and circles. This surplus should be taken into account in determining the amount of subsidy payable on ingots.

109. In determining the amount of subsidy payable to the Corporation the production of ingots has been taken at 1,500 tons and that of sheets and circles at 450 tons per annum. The production of 450 tons of sheets and circles requires 453 tons of ingots, at the rate of 1.005 tons of ingot per ton of sheets and circles. On this basis, the balance available for sale as ingots is 1,047 tons per annum. Out of the 450 tons of sheets and circles, approximately 25 per cent. should be sheets and 75 per cent. circles. The amount of subsidy payable to the Corporation should be equal to the net loss on the sale of its entire output as determined by us.

110. From the figures given in the previous paragraphs, it will be found that if the Corporation, like the Company, had been in a position to roll all its ingots into sheets and circles, it would not have required any subsidy. As stated earlier, the Corporation has on hand plans for

installing a new rolling mill with a sufficient capacity to roll all its ingots. With the installation of such a rolling mill, the Corporation, like the Company, should be able to sell all its output in the form of sheets and circles and thus obtain a surplus over the fair selling price in respect of its entire sale. The Corporation should, therefore, take immediate steps to procure and install the new rolling mill so as to reduce its costs. The Corporation has stated that the new rolling mill will be installed in a period of two years. We, however, feel that it can be done within one year and a half. Before paying any subsidy to the Corporation, Government should satisfy themselves that the Corporation has been taking the necessary steps to expedite the procurement and installation of its new rolling mills.

111. The rates of subsidy payable to the Corporation have been determined on the basis of our estimates of fair selling prices and on the assumption that the current c.i.f. prices and landed costs of ingots, sheets and circles will remain more or less at their present level. It is, however, possible that the level of c.i.f. prices may substantially change during the remaining period of protection. We, therefore, recommend that the question of the amount of subsidy, if any, payable to the Corporation and the Company should be reviewed if there is a substantial change in the c.i.f. prices of the imported articles.

112. Under the scheme of protection-cum-subsidy as given in the Tariff Board's report of 1946, it had been estimated that while the additional revenues from the specific duties on ingots, sheets and circles would be Rs. 106.80 lakhs, the total amount of subsidy on ingots, sheets and circles, payable during the three years of the scheme, would be Rs. 55.19 lakhs. Under the scheme as eventually adopted on 15th May, 1949, the subsidy claimed by the two firms for the first year amounted to Rs. 14.36 lakhs, while the additional

Financial implications of the scheme of protection.

revenue from the specific duties on the imports of ingots, sheets and circles from June, 1949 to May, 1950 came to Rs. 6.75 lakhs, the deficit balance for the first year thus being about Rs. 7.61 lakhs. This shortfall in the amount of additional revenues is mainly due to a heavy decline in the imports of ingots, sheets and other aluminium products.

113. In our present scheme of protection-cum-subsidy for the period from 15th May, 1950 to 14th May, 1952, however, no subsidy is payable to the Indian Aluminium Company. As regards the Aluminium Corporation of India, a fairly accurate estimate of the net amount of subsidy, if any, payable on sales of ingots, after giving due credit for the surplus receipts from sales of sheets and circles, could be attempted, if the details regarding the quantities of different articles sold from 15th May to 31st October, were made available. The necessary details, however, are not available to us, and, consequently, no accurate estimate of the amount of subsidy payable to the Corporation could be made. We have, however, attempted to make an estimate on the basis of such data as were available. We have also assumed that the Corporation's production and sale of ingots, sheets and circles will be at a fairly uniform monthly rate throughout the year. On this basis, estimates of subsidy, if any, payable to the Corporation in the three periods are as follows:-

[Period (i) (i.e., from 15th May to October, 1950  
i.e., 5½ months] :-

|                                                                                                                |              |
|----------------------------------------------------------------------------------------------------------------|--------------|
| (a) Sale of ingots                                                                                             | 480 tons     |
| Amount of subsidy at Rs. 395 per ton<br>of ingot = Rs. 395 x 480 =                                             | Rs. 1,89,600 |
| (b) Sale of sheets                                                                                             | 50 tons      |
| Surplus receipts (i.e., in excess of<br>the fair selling price) at Rs. 44<br>per ton of sheets = Rs. 44 x 50 = | Rs. 2,200    |

- (c) Sale of circles 150 tons  
 Surplus receipts (i.e., in excess of the fair selling price) at Rs. 157 per ton of circles = Rs.  $157 \times 150 =$  Rs. 23,550
- (d) Net subsidy payable during the period = a - (b plus c)  
 = Rs. 1,89,600 - (Rs. 2,200 plus Rs. 23,550) = Rs. 1,63,850

Period (ii) (i.e., from 1st November, 1950 to 14th May, 1951, i.e., 6½ months).

- (a) Sale of Ingots 567 tons  
 Amount of Subsidy at Rs. 72 per ton of ingot = Rs.  $72 \times 567 =$  Rs. 40,824
- (b) Sale of sheets 60 tons  
 Surplus receipts at Rs. 157 per ton of sheets = Rs.  $157 \times 60 =$  Rs. 9,420
- (c) Sale of circles 190 tons  
 Surplus receipts at Rs. 312 per ton of circles = Rs.  $312 \times 190 =$  Rs. 59,280
- (d) Net amount of surplus receipts = (b plus c) - a = (Rs. 9,420 plus Rs. 59,280) - Rs. 40,824 = Rs. 27,876

Taking periods (i) and (ii) together, (i.e., the period from 15th May, 1950 to 14th May, 1951), the net amount of subsidy payable would be = Rs. 1,63,850 - Rs. 27,876 = Rs. 1,35,974

The quantity of ingots that should be available for sale during the period is 1,047 tons. Therefore, the rate of subsidy per ton of ingots sold comes to Rs. 129.8 (i.e., Rs.  $1,35,974 \div 1,047$ ). Under the provisional arrangement, the subsidy was to be paid at the rate of Rs. 450 per ton of ingot and Rs. 160 per ton of sheets and circles. If any amounts have been already paid to the Corporation on this provisional basis, the necessary adjustments should be made.

Period (iii) (i. e., 15th May, 1951 to 14th May, 1952) -

|                                                                                                         |              |
|---------------------------------------------------------------------------------------------------------|--------------|
| (a) Sale of ingots                                                                                      | 1,047 tons   |
| Amount of subsidy at Rs. 78 per<br>ton of ingot = Rs. 78 x 1,047 =                                      | Rs. 81,666   |
| (b) Sale of sheets                                                                                      | 112 tons     |
| Surplus receipts at Rs. 210 per<br>ton of sheets = Rs. 210 x 112 =                                      | Rs. 23,520   |
| (c) Sale of circles                                                                                     | 338 tons     |
| Surplus receipts at Rs. 365 per<br>ton of circles = Rs. 365 x 338 =                                     | Rs. 1,23,370 |
| (d) Net amount of surplus receipts<br>= (b plus c) - a = (Rs. 23,520 plus<br>Rs. 1,23,370) - Rs. 81,666 | = Rs. 65,224 |

As the Corporation should be able to obtain a surplus from the sale of all its products taken together, no subsidy is payable to it in respect of this period.

114. The calculations given above, show that the amount of subsidy payable to the Corporation during the remaining period of the scheme of protection-cum-subsidy will not exceed Rs. 1,35,974. It is, however, possible that, the assumptions we have made may not be realized in two or three respects. In the first place, it is possible that the Corporation's production of ingots, sheets and circles may be lower than what we have estimated. In that case, however, the total amount of subsidy payable to it would be correspondingly less. In the second place, while the production of ingots may be as estimated, the production of sheets and circles may be less than 450 tons per annum. In that event, the Corporation might claim a larger amount of subsidy, because while the subsidy payable on larger sales of ingots would be correspondingly larger, the credits for the surplus receipts from the sales of sheets and circles would be smaller, with the result that the net subsidy payable would be at a higher figure than what has been given in our estimate. But, as we have stated in

paragraph 109, in determining the amount of subsidy on ingots payable to the Corporation, the production of sheets and circles should be taken at 450 tons per annum, and the Corporation should not be entitled to claim a larger amount of subsidy than Rs. 1,35,974 by reducing the production of sheets and circles below that figure. In the third place, the c.i.f. prices we have taken for our calculation, may vary in future. But, having regard to the rising tempo of stock-piling and re-armament in the U.S.A. and other countries, we anticipate a further rise rather than a fall in the c.i.f. prices of aluminium products. On this account, therefore, the amount of subsidy payable, is likely to diminish rather than increase.

115. From what has been stated above, it will be seen that the maximum amount of subsidy payable under the scheme of protection-cum-subsidy for the period from 15th May, 1950 to 14th May, 1952, will be Rs. 1,35,974. On the other hand, during the first year, Government will derive additional revenues from the specific duty at the rate of Rs. 237 per ton on imports of ingots and Rs. 46 per ton on imports of sheets and circles; and, during the second year, such additional revenues will continue to be obtained from the specific duty at the rate of Rs. 146 per ton on imports of ingots. During the year 1949-50, imports of ingots and sheets and circles were subject to monetary ceilings from dollar and sterling areas, and 15 tons of ingots and 6,127 tons of sheets and circles were imported. Since 5th August, 1950, however, ingots have been put on O.G.L. from dollar as well as sterling areas, and sheets and circles on O.G.L. from sterling areas only. It is, therefore, not unlikely that there will be an increase in the imports of ingots, sheets and circles in the future. Even assuming, however, that the imports in 1950-51 and 1951-52 will be no higher than those of 1949-50, the additional revenues from the specific duties should be of the order of Rs. 2.80 lakhs, which would be more than sufficient to cover the payment of subsidy to the Corporation during the remaining period of the scheme of protection-cum-subsidy.

116. According to the estimates made by Government in May, 1949, for the purpose of the scheme of protection-cum-subsidy for the aluminium industry, the amounts of subsidy payable on ingots, sheets and circles to the Company and the Corporation year by year were considerable. The amounts payable to the Company were Rs. 5.76 lakhs in 1950-51 and Rs. 3.25 lakhs in 1951-52. In the case of the Corporation, the amounts were Rs. 8.99 lakhs for 1950-51 and Rs. 8.85 lakhs for 1951-52. According to our present estimates, no subsidy is payable to the Company during the second and third years of the scheme, and only a small amount of subsidy is payable to the Corporation during the current year only, no subsidy being required in the next year. In so far as the Company is concerned, the altered position is not due to any reduction in the fair selling prices of its sheets and circles; on the contrary, the estimates of such prices have actually gone up mainly because we have allowed a much higher return on fixed capital. If no subsidy is required to be paid to the Company in 1950-51 and 1951-52, this is entirely due to the rise in the c.i.f. prices of sheets and circles. As regards the Corporation, the heavy reduction in the amount of subsidy payable to it is due partly to a reduction in the estimates of fair selling prices but mainly to the rise in the c.i.f. prices of the imports. In the context of the present international situation, there is no reason to expect that the c.i.f. prices of the imported aluminium products will go down in the next two years. But, when the present tension is relaxed and normal conditions are restored, the c.i.f. prices of imports are likely to decrease to an appreciable extent. In that event, the question of protection to the aluminium industry will have to be reviewed afresh, because, until the units of production have been enlarged to a capacity of 15,000 to 20,000 tons of ingots per annum and the cost of power supply to the industry has been appreciably reduced, the gap between the cost of production in India and that in foreign countries is

Long-term  
prospects.



bound to remain high. Judging from the evidence we have received no significant improvements in these respects are likely to materialise in the next four or five years, and even then it is unlikely that our scale of production will be so large or our cost of power supply so low as in the more important producing countries like Canada and the U.S.A. We cannot, therefore, envisage a stage in the foreseeable future when our aluminium industry will be able to dispense with protection or assistance.

117. As stated in paragraphs 103 to 106, we consider that there is no case for alteration in the rates of duties on aluminium products as fixed under the protection-cum-subsidy scheme of 15th May, 1949. The current rates of duties on aluminium products, as prescribed in the First Schedule to the Indian Customs Tariff (Thirty-second Issue), are as follows:-

| Item No. | Name of article                                                                                                                       | Nature of duty | Standard rate of duty                         | Preferential rate of duty if the article is the produce or manufacture of |                  |       | Duration of protective rates of duty |
|----------|---------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------------------------------------|---------------------------------------------------------------------------|------------------|-------|--------------------------------------|
|          |                                                                                                                                       |                |                                               | The U.K.                                                                  | A British Colony | Burma |                                      |
| 66       | Aluminium manufactures, the following, namely:-                                                                                       |                |                                               |                                                                           |                  |       |                                      |
|          | (a) Plates, sheets, circles, strips and foil, including foil in any form or size ordinarily used as parts and fittings of tea chests; | Protective.    | 30% <i>ad valorem</i> plus Rs. 46/- per ton.  | ..                                                                        | ..               | ..    | May, 14th 1952.                      |
|          | (b) Other manufactures, not otherwise specified.                                                                                      | Revenue        | 30% <i>ad valorem</i>                         | ..                                                                        | ..               | ..    |                                      |
| 66(1)    | Aluminium in any crude form, including ingots, bars, blocks, slabs, billets, shots and pellets.                                       | Protective.    | 30% <i>ad valorem</i> plus Rs. 237/- per ton. | ..                                                                        | ..               | ..    | May 14th 1952.                       |

The specific duty of Rs. 46 per ton on item 66(a), plates, sheets, circles, etc., is to be abolished and the specific duty on item 66(1), Aluminium ingots, bars, etc., is to be reduced from Rs. 237 per ton to Rs. 146 per ton, with effect from 15th May, 1951, and the reduced rate is to remain in force until 14th May, 1952. It will be noted that item 66(a) includes aluminium foils. Foils, however, do not require any substantive protection. The article is included in the protected category because its raw material, viz., strips in coils, is protected, and, on that account, foils require compensatory protection.

118. The present scheme of protection is due to expire on 14th May, 1952. The gap between the fair selling prices of ingots, sheets and circles produced in India and the landed cost, ex-duty, of the imported articles is still considerable. On the other hand, on the basis of such information as we have obtained, we do not anticipate any major improvement in the situation within this period, which could enable the two manufacturers of virgin aluminium to dispense with protection. It is, however, possible that there may be some reduction in costs owing to better efficiency, which may justify a decrease in the quantum of protection. Moreover, the Corporation's plans for installing a larger rolling mill and adding a third boiler may also have been completed within this period, thereby leading to larger production and a consequent reduction in costs. Having regard to these factors, we recommend that the question of continuing or modifying the scheme of protection should be reviewed early in 1952.

## CHAPTER VIII

## OTHER FORMS OF ASSISTANCE TO THE INDUSTRY

119. As we have stated earlier in paragraph 50, the Indian Aluminium Company maximum production of ingots achieved by the Company at its works at Alwaye was 2,347 tons in 1948-49 as against an installed rated capacity of 2,500 tons. The Company is confident that it can step up the production to 2,500 tons of ingot if adequate power is made available. Having regard to the importance of aluminium and also to the present shortage of the metal in the country, we strongly recommend that the Central Government should request the Travancore-Cochin Government to make necessary arrangements to supply the additional power required for increasing the production to 2,500 tons. The increased production will incidentally reduce the costs also. In our estimates of costs for 1951-52, we have assumed that the Travancore-Cochin Government would be able to supply adequate power required for the production of 2,500 tons of ingot.

120. It was brought to our notice that the Corporation had been experiencing great difficulties in obtaining technical advice and assistance from established manufacturers of aluminium in foreign countries. The Corporation informed the Board that it had approached certain aluminium producers in Europe for securing technical collaboration but that the response was extremely unsatisfactory in that the firms concerned demanded exorbitant terms. It cannot be sufficiently emphasized that the sound development of the aluminium industry in this country would mainly depend on its technical efficiency. As a result of our inquiry, we have formed the view that there is much room for improvement in operational efficiency at the Corporation's works and the Corporation agrees with

this view. It is, therefore, essential that the Corporation should be able to secure technical advice and assistance of a high order. We, accordingly, recommend that Government should explore the possibility, under the Point Four Programme, of securing the necessary technical advice and assistance for the Aluminium Corporation from the U.S.A.

We have stated in paragraph 10 that the Corporation has on hand plans for immediate expansion of its rolling mills and for installing a third boiler, which would help it increase the production of ingots. We recommend that Government should give high priority for the import of plant and machinery for its expansion plans. The Corporation also made a general complaint that there was inordinate delay in issuing import licences for essential raw materials like cryolite, aluminium fluoride, fluorspar and carbon electrodes. We trust that, with the recent improvement in the procedure for granting import licences, such delays would be minimised in future.

121. We have been advised that the minimum capacity for Facilities for an economic unit of aluminium production in expansion. this country should be 15,000 tons of ingot per annum. The present capacity of the Aluminium Company's reduction works is only 2,500 tons of ingot and that of the Corporation is 2,000 tons of ingot. This small scale of production is mainly responsible for the high overhead charges in respect of depreciation, return on capital, etc., per ton of ingot. There is no doubt that the aluminium industry in this country cannot attain a reasonably low cost of production, which would be at all comparable with that in foreign countries, until the capacity of the existing units has been expanded to at least 15,000 tons and/or new economic units with such capacity have been established in the country. One of the main hindrances to enlarging the capacity of the existing units or to establishing new units of an economic size is the lack of adequate power supply

at the present time. We are advised that such power supply for expansion of the aluminium industry will not be available until the Damodar Valley and the Hirakud projects have been completed. We understand that this is likely to take place in three to five years' time. Until then, therefore, the prospects of expanding the production of virgin aluminium in the country would be inconsiderable. In the meantime, however, it may be possible for the two existing units to expand their capacity to some extent by suitable additions to their plant. We recommend that Government should give facilities to the Company and the Corporation to import plant and machinery for this purpose as and when required.

122. The aluminium ingots produced in India are mostly used for rolling sheets and circles required for the manufacture of utensils. Manufacturers of other aluminium products.

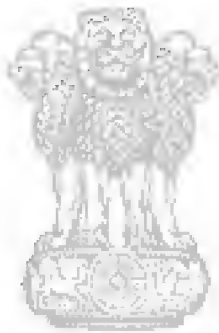
It has been brought to our notice that these ingots are not suitable for the manufacture of articles like A.C.S.R. cables, aluminium foils, capsules and certain accessories and components for the automobile industry. We have also been informed that aluminium alloy sheets as well as aluminium alloy rods, tubes, extruded sections, etc., which are required for industrial applications and for transport vehicles for road, railway and air, are not produced in India. The Metal Box Company of India has represented that a special type of aluminium alloy (1½% manganese) required for certain containers is not manufactured in India and that this should be subject to the same rate of duty as tinplate, viz., Rs. 78 per ton, with a view to keeping the cost of such aluminium containers at a reasonable level. The D.G.I. & S. have recommended that such special types of aluminium and aluminium alloys should be allowed to be imported on payment of duty at a low rate with a view to encouraging the expansion of their use for industrial and constructional purposes and thereby gradually expanding the market for aluminium products, which will lay the foundation for setting up larger and more economic units of aluminium production in the country. The representative

of the Central Housing Factory at Delhi, who gave evidence before us, has also informed us that his department proposes to use aluminium alloys for the roofing of pre-fabricated houses and suggested that, in order to keep the cost of such houses at a reasonable level, the alloys required for the purpose should be allowed to be imported on payment of duty at a low rate. Although a request for a reduction of duty on such aluminium products and aluminium alloys as are not produced in the country, has been made by the various parties named above and also recommended by the D.G.I. & S., no evidence has been produced by them to show that the present rates of duties on aluminium products had severely affected the competitive position of the industries concerned or that the incidence of the duties on their cost of production had been unduly high. In the absence of adequate evidence in this respect, therefore, we do not think that a case has been made out for a general reduction of duty and the consequent sacrifice of revenue at the present time. We, however, recommend that all such applications for a rebate of duty on aluminium products and aluminium alloys should be carefully examined by Government and that a rebate of duty, if any, should be granted only in such cases and to such extent as may be found to be justified as a result of such examination. The present concession granted to the Aluminium Industries, Ltd., by way of a refund of duty in excess of 30 per cent. on aluminium rods for A.C.S.R. cables, may, however, be continued until 14th May, 1952.

123. The representatives of the utensils manufacturers have informed the Board that there is sufficient scope for exports of aluminium utensils to the neighbouring countries, such as Ceylon, Malaya, Burma, East Africa, etc., and suggested that it would be desirable to encourage exports to these markets. For this purpose, they have requested that there should be a full refund of the duty paid on imported aluminium sheets and circles on their re-export as aluminium utensils. The present position is

Drawback of import  
duties on re-export  
of aluminium products.

that a drawback is granted on such re-exports to the extent of seven-eighths of the import duty paid on the aluminium sheets and circles used. It is, of course, true, as a general rule, that the grant of such drawback should, in normal circumstances, lead to a reduction in the price of the exported commodity and thereby encourage the export trade. No evidence, however, was placed before us to show that the grant of a drawback to the full extent of the duty in the case of aluminium utensils would bring about such a result. We, therefore, do not recommend that the rate of drawback should be increased.



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CHAPTER IX  
SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

124. Our conclusions and recommendations may be summarised as under:

(i) The object of the present inquiry is to determine the quantum of protection, if any, required for aluminium ingots, sheets and circles produced and sold by the Indian Aluminium Company and the Aluminium Corporation of India during the period from 15th May, 1950 to 14th May, 1952, and to consider the best method of affording such protection. [Paragraph 4]

(ii) Having regard to the importance of establishing the aluminium industry in this country, Government have given active encouragement and substantial assistance to it from the very start. [Paragraph 11]

(iii) The basic raw material for the industry, viz., bauxite ore, is available in sufficient quantity in the country. But the indigenous bauxite is inferior in some respects to the bauxite used in the principal aluminium producing countries, such as Canada and U.S.A. [Paragraphs 15 and 16]

(iv) The production of aluminium requires large blocks of electric power, about 10 units of electrical energy being required for each lb. of aluminium. Electrical power cannot at present be produced in India at costs comparable to American or European costs. [Paragraph 17]

(v) Petroleum coke required for the aluminium industry is obtained by the Corporation from Digboi in Assam. The Assam Rail Link Committee has imposed restrictions on the movement of petroleum coke through the Link and has suggested that the Corporation should make use of the river route.



As the river route lies partly through Pakistan, it involves considerable delays and inconveniences. Transport through the river route is also more costly. We recommend that Government should request the Railway Board to consider the possibility of giving facilities for transporting petroleum coke from Digboi to Asansol through the Assam Rail Link. [Paragraphs 20 and 21]

(vi) The Indian Aluminium Company is a subsidiary of Aluminium Ltd., a Canadian Holding Company, which owns 70 per cent. of the share capital of the Indian Aluminium Company. We are, however, informed that the Directors of the Indian Aluminium Company are given a very large measure of autonomy in managing the affairs of the Company.

[Paragraphs 23 to 25]

(vii) The Indian Aluminium Company has been pursuing a policy of training Indian technicians for responsible posts in the different branches of the industry. At the present time, the management of the Company's mines and its three component units is in the hands of Indian nationals. Besides, the posts of Sales Manager, Purchasing Officer and the Chief Cost Accountant are held by nationals of the country. [Paragraph 26]

(viii) As Aluminium Limited of Canada commands very considerable financial and technical resources and has acquired extensive experience of aluminium production in different parts of the world, the Indian Aluminium Company, being a subsidiary of Aluminium Ltd., has the great advantage of securing technical and financial advice from the parent Company at a small cost. The Company has also the advantage of obtaining electric power from Travancore-Cochin Government at a comparatively low rate. On the other hand, its great disadvantage is that, owing to circumstances beyond its control, it has to bear heavy freight on the transport of alumina from Muri to Alwaye and of aluminium from Alwaye to Belur. The total freight on this account comes to about Rs. 270 per ton of pig aluminium. [Paragraph 33]

(ix) The total amount of profits earned by the Company since its inception has been small. It has not been able to declare any dividends on ordinary shares since it was converted into a public limited company in 1944.

[Paragraph 31]

(x) Three members of the J.K. family own 50 per cent. of the paid-up capital of the Corporation and also the entire block of its debentures amounting to Rs. 25 lakhs.

[Paragraph 37]

(xi) The Corporation has been able to declare dividends on 6 per cent. cumulative preference shares only upto 31st March, 1944. No dividend has been paid on 5 per cent. cumulative preference shares and on ordinary and deferred shares. Contingent liability on account of dividends payable on cumulative preference shares as at 31st March, 1950, comes to Rs. 12.73 lakhs.

[Paragraph 41]

(xii) The Corporation has the advantage of having all its plants and its coal mine located together in the same place. But its cost of power is very high. Its plants are also not well-balanced. Besides, the design of its existing boilers is not satisfactory.

[Paragraph 42]

(xiii) The Corporation is also handicapped by the fact that its rolling mill has a small capacity and can roll only about one-third of the total production of ingots. Its costs of production of sheets and circles, consequently, are unduly high.

[Paragraphs 42 to 44]

(xiv) There are at present about 20 units for rolling aluminium sheets and circles. There are also a number of units for manufacturing aluminium utensils and hollow-ware. Besides, there is one unit, a subsidiary of a British Company, which manufactures aluminium foils and strips. There are also two units for manufacturing aluminium cables. There is one unit for manufacturing aluminium capsules and there is one unit for producing aluminium powder and paste.

[Paragraph 46]

(xv) The total demand for various aluminium products is estimated at 15,000 tons per annum. [Paragraph 49]

(xvi) The production of virgin aluminium in the next two years is expected to be about 4,000 tons per annum. [Paragraph 50]

(xvii) While the ingots produced at the works of the Company have attained a fairly high standard, the products of the Corporation need improvement. [Paragraph 51]

(xviii) The Indian Standards Institution should take early steps to finalise the standard specifications for aluminium ingots produced in the country. [Paragraph 51]

(xix) Imports of aluminium ingots, sheets and circles were subject to monetary ceilings from dollar and sterling areas during the period from July, 1948 to June, 1950. By a Notification of 5th August, 1950, imports of aluminium ingots have been put on O.G.L. from dollar as well as sterling areas, and imports of sheets and circles have been put on O.G.L. from sterling area only. [Paragraph 52]

(xx) Imports of aluminium in all its forms were 9,453 tons in 1948-49 and 6,673 tons in 1949-50. During the first 9 months of 1950, they were 3,000 tons, out of which sheets and circles together accounted for nearly 2,000 tons. [Paragraph 55]

(xxi) On the basis of our estimates of demand and internal production, there would be scope for imports of aluminium to the extent of 11,000 tons per annum in the next two years. [Paragraph 55]

(xxii) In estimating costs of production for the Company, we have made considerable reduction in overheads and head office expenses. [Paragraph 63]

(xxiii) In estimating the cost of ingot at the Company's works, we have taken the rate for electricity at Rs. 75 per kw. year, which is the amount at present provisionally paid by the Company and is shown in its books. The question of

an appropriate rate for electricity, however, is under dispute and has been referred to an Arbitration Tribunal. In case it is eventually decided that the Company should pay a higher rate than at present, the ingot cost will go up by Rs. 2.716 per ton for every increase of Re. 1 in the rate per kw. year. [Paragraph 64]

(xxiv) Having regard to the fact that the Company's alumina plant and ropeway are at present not utilised to their full capacity, we have taken two-thirds of the block in these two units for purposes of calculating depreciation. [Paragraph 72]

(xxv) We have estimated the working capital required at Rs. 1 lakh per 100 tons of ingot production and have allowed interest at 4 per cent. per annum on such working capital. [Paragraph 73]

(xxvi) In estimating fair selling prices, we have allowed a rate of 7 per cent. per annum by way of return on the fixed capital. [Paragraphs 74 and 75]

(xxvii) In the case of the Company, we have estimated fair selling price for ingot at Rs. 2,882.62 per ton for 1950-51 and Rs. 2,761.84 per ton for 1951-52; the fair selling price for sheets comes to Rs. 3,858.99 per ton for 1950-51 and Rs. 3,732.18 per ton for 1951-52; and for circles the fair selling price is Rs. 3,841.03 per ton for 1950-51 and Rs. 3,707.95 for 1951-52. [Paragraphs 76 and 77]

(xxviii) The Corporation is not maintaining a proper system of costing and should immediately start doing so. [Paragraph 79]

(xxix) In estimating fair selling prices for the Corporation, we have allowed interest on working capital and return on the block on the same basis as in the case of the Company. [Paragraph 89]

(xxx) Having regard to the fact that the Corporation's aluminium plant is being worked to the extent of 60 per cent. of its capacity and the ingot plant at 75 per cent. of the

capacity, we have allowed depreciation at 75 per cent. on the written-down block for alumina and aluminium.

[Paragraphs 90 and 91]

(xxxix) The fair selling price of ingots produced by the Corporation has been estimated at Rs. 2,790.72 per ton in 1950-51 and at Rs. 2,705.74 per ton for 1951-52. The fair selling price of sheets and circles has been estimated at Rs. 3,942.98 per ton for 1950-51 and Rs. 3,843.72 per ton for 1951-52. [Paragraph 92]

(xxxix) The Corporation's claim for provision of additional expenditure in connection with the loan from the Industrial Finance Corporation is not justified. [Paragraph 93]

(xxxix) The estimated fair selling price of ingots produced by the Company is higher than that of the Corporation by about Rs. 90 per ton. [Paragraph 99]

(xxxix) The estimated fair selling prices of sheets and circles produced by the Company are lower than those for the Corporation. [Paragraph 100]

(xxxix) The c.i.f. prices and landed costs of imported ingots, sheets and circles have gone up considerably since the introduction of the scheme of protection in May, 1949. On account of this factor, there is a reduction in the quantum of protection required for ingots, sheets and circles produced by the two companies. [Paragraphs 101 and 102]

(xxxix) The present level of prices of aluminium ingots, sheets and circles is not unduly high for consumers. Consequently, there is no justification for a reduction in the present rates of duties, so far as consumers are concerned. [Paragraphs 103 to 106]

(xxxix) In the existing circumstances, we consider it reasonable that the profits on the sale of sheets and circles should be taken into account in determining the amount of subsidy, if any, required by the two companies. [Paragraph 107]

(xxxviii) On the basis of our estimates, no subsidy on sales of sheets and circles is payable to the Indian Aluminium Company for the period from 15th May, 1950 to 14th May, 1952. If any amount has already been paid to the Company on this account under the provisional arrangement, it should be refunded by the Company. [Paragraph 108]

(xxxix) During the period from 15th May, 1950 to 14th May, 1951, the rate of subsidy on the sale of ingots payable to the Corporation is Rs. 129.8 per ton. The maximum amount of subsidy payable to the Corporation in respect of this period comes to Rs. 1,35,974. We have been informed that a subsidy at the rate of Rs. 450 per ton of ingot was to be paid to the Corporation on a provisional basis, pending Government's final decision after consideration of our recommendations. If any amount has been already paid to the Corporation in respect of sales during this period on this provisional basis, the necessary adjustment should be made. No subsidy is payable to the Corporation in respect of the period from 15th May, 1951 to 14th May, 1952. [Paragraphs 108, 109, 113, 114]

(xl) Before paying any subsidy to the Corporation, Government should satisfy themselves that the Corporation has been taking necessary steps to expedite the procurement and installation of its new rolling mills. [Paragraph 110]

(xli) If there is a substantial change in the c.i.f. prices of the imported ingots, sheets and circles in future, the question of the amount of subsidy, if any, payable to the Corporation and the Company should be reviewed. [Paragraph 111]

(xlii) We estimate that the amount of additional revenues that would be obtained from the additional specific duties on ingots, sheets and circles during the period from 15th May, 1950 to 14th May, 1952 would exceed the amount of subsidy payable to the Corporation. [Paragraph 115]

(xliii) We cannot envisage a stage in the foreseeable future when our aluminium industry will be able to dispense with protection or assistance. [Paragraph 116]

(xliv) The rates of duties on aluminium, leviable under the scheme of protection are shown in Paragraph 117.

(xlv) The question of continuing or modifying the scheme of protection should be reviewed early in 1952. [Paragraph 118]

(xlvi) The Central Government should request the Travancore-Cochin Government to make necessary arrangements to supply the Indian Aluminium Company with the additional power required for increasing the production of pig aluminium to 2,500 tons per annum. [Paragraph 119]

(xlvii) Government should explore the possibility, under the Point Four Programme, of securing the necessary technical advice and assistance for the Aluminium Corporation of India from the U.S.A. [Paragraph 120]

(xlviii) Government should give high priority to the Corporation for importing the necessary plant and machinery for its rolling mills and for the third boiler.

[Paragraph 120]

(xlix) Government should give facilities to the Company and the Corporation to import plant and machinery as and when required. [Paragraph 121]

(l) All applications for a refund of duty on aluminium products and aluminium alloys that may be required for various consuming industries such as A.C.S.R. cables, foils, pre-fabricated houses, etc., should be examined by Government, and a rebate of duty, if any, should be granted only in such cases and to such extent as may be found to be justified as a result of such examination. [Paragraph 122]

(li) The present concession granted to the Aluminium Industries Ltd., by way of a refund of duty in excess of

30% on aluminium rods for A.C.S.R. cables, should be continued until 14th May, 1952. [Paragraph 122]

(111) There is no case for an increase in the present rate of drawback which is given on exports of aluminium products. [Paragraph 123]

125. We wish to express our thanks to the manufacturers, Acknowledgments. importers and consumers who answered our questionnaires and gave oral evidence before us. Our special thanks are due to the Indian Aluminium Company and the Aluminium Corporation of India for their co-operation in connection with the inquiry. We have to thank Shri Manu Subedar for responding to our invitation to meet us and give us the benefit of his views on certain aspects of protection to the aluminium industry. We have also to thank the Central Electricity Commission for deputing Shri H.S. Kulkarni, Deputy Chief Engineer (Utilization), to give oral evidence at the public inquiry. We have to place on record our appreciation of the valuable assistance given by Shri R.N. Kapur, our Honorary Technical Adviser and Shri N. Krishnan, Cost Accounts Officer attached to the Board. Shri Kapur has shown perfect competence in handling technical problems and Shri Krishnan has successfully resolved many great difficulties in costing. We are also grateful to Messrs. Martin-Burn Ltd. of Calcutta for lending us the whole time services of Shri R.N. Kapur for a period of three months in connection with the inquiry.

H.L. Dey,  
*President.*

B.V. NARAYANASWAMY,  
*Member.*

M.A. Mulky,  
*Secretary.*

B.N. Adarkar,  
*Member*

Bombay,  
Dated, 25th January, 1951.



APPENDIX I  
(Vide paragraph 3)  
GOVERNMENT OF INDIA  
MINISTRY OF COMMERCE

New Delhi, the 15th May, 1949.

RESOLUTION  
(Tariffs)

No. 3(3)-T.B./48.- As announced in their Resolution No. 218-T(28)/47, dated the 22nd March, 1947, on the Tariff Board's report on the claim to protection from the Aluminium Industry, Government appointed an Official Committee to carry out the further investigations indicated therein. The Official Committee has submitted its report. Government have considered this report in consultation with the Tariff Board and have decided that the Indian Aluminium Company and the Aluminium Corporation of India should be subsidised to the extent of the difference between the fair selling price of their products, having regard to their respective costs of production and the fair selling price of similar imported articles. Such assistance will be granted for an initial period of three years, the subsidy being progressively reduced, making allowance for the estimated reduction in the cost of production of alumina in the case of the Indian Aluminium Company and in the case of the Aluminium Corporation of India the estimated reduction in the cost of producing aluminium accruing from an increase in capacity which can be achieved without substantial capital investment and from a decrease in the consumption of power. The subsidy will largely be met out of the additional revenue that is expected to be realised by the enhanced duties that will be imposed

on aluminium ingots and sheets and circles. The rates of subsidies that will be paid are as follows:-

| Year    | (Rate of subsidy in rupees per ton) |                       |                       |                       |     |             |
|---------|-------------------------------------|-----------------------|-----------------------|-----------------------|-----|-------------|
|         | Indian Aluminium Company            |                       | Aluminium Corporation |                       |     |             |
| 1949-50 | 330                                 | (on sheets & circles) | 710                   | (on sheets & circles) | 900 | (on ingots) |
| 1950-51 | 230                                 | Do.                   | 610                   | Do.                   | 825 | Do.         |
| 1951-52 | 130                                 | Do.                   | 510                   | Do.                   | 750 | Do.         |

The scheme involves the continued levy of import duty at the existing rate of 30% *ad valorem* and the levy in addition of specific duties at the following rates:

| Year    | Rate of additional duty on ingots in rupees per ton. | Rate of additional duty on sheets, strips and circles in rupees per ton. |
|---------|------------------------------------------------------|--------------------------------------------------------------------------|
| 1949-50 | 328                                                  | 121                                                                      |
| 1950-51 | 237                                                  | 46                                                                       |
| 1951-52 | 146                                                  | Nil                                                                      |

These rates of duty and subsidy are based on the landed cost ex-duty of aluminium ingots being Rs. 1,275 per ton and of 20 gauge circles being Rs. 2,614 per ton and are liable to suitable adjustments if these prices vary appreciably. A notification under Section 2 of the Protective Duties Act, 1946 is being issued, imposing the additional duties indicated above in so far as it is necessary to cover the period before the necessary legislation is enacted.

2. Government have also arrived at the following decisions:

- (1) The existing pool arrangements in regard to aluminium will be wound up as from the 15th May, 1949.

- (ii) Ingot stocks with producers on the 15th May, 1949, will be subsidised as far as possible from the funds at the credit of the Pool. The balance, if any, will be eligible for subsidy under this scheme.
- (iii) Import of aluminium ingots, sheets and circles will be allowed freely consistently with the exchange position.
- (iv) All possible steps will be taken to give effect to recommendations (1) to (5) contained in paragraph 2 of their Resolution of the 22nd March, 1947.
- (v) A special Aluminium Development Fund, as recommended by the Tariff Board, need not be constituted for the time being.
- (vi) Prices of utensils made of aluminium, as originally recommended by the Tariff Board, will not be fixed, the Control Order being no longer in force.
- (vii) Aluminium tea-chest linings will be treated as an aluminium product for the purpose of the rate of protective duty leviable thereon, as recommended by the Tariff Board.
- (viii) The case of the Aluminium Industries Ltd. of Trivandrum for whom the Tariff Board had recommended a rebate of duty in excess of 30% *ad valorem* on the basis of the quantity of aluminium cable produced and marketed by them will be considered on merits after they go into production, having regard to the general principle accepted by Government in regard to the exemption or reduction from customs duty of imported raw materials for industries.
- (ix) The recommendation of the Tariff Board that the aluminium interests should form a strong organisation comprising the whole industry for giving general guidance to the industry and represent it *vis-a-vis* Government and organisations of the industry in other countries is commended to the industry.

3. Detailed instructions regarding the records to be maintained by the Indian Aluminium Company and the Aluminium Corporation of India, the returns to be submitted and the procedure to be followed in claiming the subsidy, are under consideration and will issue shortly.

GOVERNMENT OF INDIA  
MINISTRY OF COMMERCE

New Delhi, the 15th May, 1949.

NOTIFICATION  
(Tariffs)

No. 3(3)-T.B./48.- In exercise of the powers conferred by sub-section (1) of Section 2 of the Protective Duties Act, 1946 (XVII of 1946), the Central Government is pleased to impose the following duties of customs on (a) aluminium ingots and (b) aluminium sheets and circles, namely:

- (a) Aluminium ingots.. Rs. 328 per ton in addition to the duty leviable under item 66(1) of the First Schedule to the Indian Tariff Act, 1934.
- (b) Aluminium sheets and circles... Rs. 121 per ton in addition to the duty leviable under item 66 or 40(3) First Schedule to the Indian Tariff Act, 1934.

नमो भगवते वासुदेवाय

S. Ranganathan,  
Joint Secretary to the Government of India.

APPENDIX II  
(Vide paragraph 3)

IMPLEMENTATION OF THE 1946 TARIFF BOARD'S RECOMMENDATIONS.

Board's recommendations.

(Vide Department of Commerce Resolution No. 218-T(28)/47 dated 22nd March, 1947)

1. The Board draws the attention of Government to the question of railway freight and port dues charged on raw materials and semi-manufactured goods and recommends examination by the appropriate authority with a view to eliminating factors which may retard the attainment of low costs of production of aluminium ingot and expansion of production of aluminium in the country.

2. Government should take active steps to ensure that the reduction works at Alwaye get the power necessary for attainment of full production as early as possible.

3. Steps should be taken to encourage expansion of production so as to meet home demand.

4. Specifications should be prescribed to ensure the purity of the metal used in utensil making, this being essential in view of the large quantity of utensils consumed in the country.

Present stage of implementation.

(Vide letter No. DM-3/386/50 dated 13/18 July, 1950 from D.G.I. & S.)

So far Government have been unable to reduce freight rates.

It has not been possible to supply power to Alwaye works for production of more than 2,500 tons of ingots.

The Corporation, has not installed a third boiler as suggested by the Board.

Specifications for aluminium to be made into utensils have been issued by the Indian Standards Institution.

5. Government should equip the rolling mills to procure modern up-to-date equipment from abroad as soon as possible.

6. The problem of protecting the industry has to be met by a system of protective duty on imports on the one hand and subsidy to the home producer on the other.

7. The scheme of protective duty-cum-subsidy should be based on the selling price to the consumer of Rs. 1,600 per ton of ingot for the period ending March 1949. This price should be fixed as the maximum selling price. The maximum selling price for sheets and circles should be fixed at Rs. 2,450 per ton equal to the present lowest landed cost.

8. A specific duty of Rs. 590 per ton should be levied on imports of aluminium ingot into the country for the period ending 31st March 1949. If the landed cost ex-duty on imported ingot falls below Rs. 980 per ton, action should be taken under section 4(1) of the Indian Tariff Act, 1934, to raise the duty so as to maintain the measure of protection recommended by us. There should be no modification in the selling price recommended during the period of protection.

Government have been willing to issue licences for import of rolling mills for rolling aluminium but so far no applications have been received.

These recommendations have been implemented in a modified form.

9. A specific duty of Rs. 590 per ton should be levied on aluminium sheets and circles for the period ending March 31, 1949. Should the landed cost ex-duty fall below Rs. 1,880 per ton, the amount of duty should be raised so as to bring up the total landed cost including duty to Rs. 2,450 per ton and thereby to maintain the measure of protection recommended by us.

10. A subsidy should be paid to the Aluminium Corporation of India and, if so decided by Government, to the Indian Aluminium Company, equal to the difference between their fair selling price or cost of production including profit and the selling price recommended by us. On this basis, the Company should be paid a subsidy of Rs. 817 per ton during the six months October-March 1946-47, Rs. 586 per ton in 1947-48 and Rs. 300 per ton in 1948-49. The Corporation should be paid a subsidy of Rs. 848, Rs. 576 and Rs. 268 per ton respectively during the three periods. The subsidy should be paid on the actual production.

These recommendations have been implemented in a modified form.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| <p>11. If the production assumed in the case of the Indian Aluminium Company were exceeded the cost of production and fair selling price would correspondingly fall and the amount of subsidy payable should also be reduced. A review should be undertaken for this purpose some time in 1948.</p>                                                                                                                                                    | <p>These recommendations have been implemented in a modified form.</p>                    |
| <p>12. The cost of the subsidy can be met from the additional revenue expected as a result of the higher duties recommended, and a substantial part of the balance of such additional revenue, i.e., excluding the equivalent of the existing revenue duty proceeds, should not be carried to the general revenues of the State, but should constitute an Aluminium Development Fund to be utilised for the development of the aluminium industry.</p> | <p>Has not been accepted by the Government.</p>                                           |
| <p>13. Aluminium products should be placed on the list of open general licence with effect from the date on which the scheme of protection comes into force.</p>                                                                                                                                                                                                                                                                                       | <p>Due to foreign exchange difficulties this recommendation could not be implemented.</p> |



14. The pool arrangement should be terminated when the scheme of protection comes into force and the balance in the pool fund merged in the Aluminium Development Fund, recommended by us.

Pool arrangements have been terminated with the coming into force of the protection scheme. Since the idea of aluminium development fund has not been accepted by Government, the balance in the pool fund has been deposited in the general revenue.

15. The prices fixed for utensils under the Aluminium Utensils Control Order should be revised when the issue price of ingot is reduced from the present level of Rs. 2,100 per ton to Rs. 1,600 per ton.

The Aluminium Utensils Control Order lapsed with the Defence of India Rules and there has been no control on prices of utensils since November, 1945.

16. Aluminium foil should be treated as an aluminium product subject to the protective duty of Rs. 590 per ton as in the case of ingots, sheets and circles and other products.

Has been implemented and the duty on aluminium foil has been made the same as that on sheets and circles.

17. The Aluminium Industries Limited of Trivandrum should be given a rebate on duty in excess of 30 per cent. on the basis of the quantity of aluminium cables produced and marketed by them. The concession of rebate of duty in excess of 30 per cent. *ad valorem* should be extended to any other producers of aluminium

Has been implemented.

cables who may come into existence during the protection period. The rebate under this recommendation may be a charge on the Aluminium Development Fund, if our recommendation in regard to it is accepted.

18. We recommend to the aluminium interests to form a strong organisation comprising the whole industry for giving general guidance to the industry and representing it *vis-a-vis* Government and organisations of the industry in other countries.

The Government is not aware of the aluminium interests having organised themselves.



APPENDIX III  
(Vide paragraph 5)

*List of firms and bodies to whom the Board's special questionnaires were issued and indicating those who replied or submitted memoranda.*

- \* indicates those who replied to the questionnaire.  
\*\* indicates those who submitted memoranda.

A. PRODUCERS:

(a) Aluminium Ingots, Sheets and Circles.

- \*1. Aluminium Corporation of India, Ltd.,  
7, Council House Street,  
Calcutta.
- \*2. Indian Aluminium Co. Ltd.,  
5, Council House Street,  
Calcutta.

(b) Sheets and Circles only.

- 1. Agarwal Metal Works,  
Jhajjar Road,  
Rewari.
- 2. Aluminium Hindustan Ltd.,  
Bank of Baroda Building,  
Applo Street, Fort,  
Bombay.
- 3. Balli Singh Bhagwan Singh,  
Bazar Kasera,  
Amritsar.
- 4. Dhiraj Metal Works,  
P.O. Box No. 10,  
Rajkot.
- \*5. Devi Dayal & Sons,  
Tulsiram Gupta Mills Estate, Reay Road,  
Bombay 10.
- 6. Gupta Rolling Mills & Refineries,  
Gupta Mills Compound, Reay Road,  
Bombay 10.
- 7. Hukumchand Iswardas,  
167, Vithal Peth,  
Poona 2.

## A. PRODUCERS: (Contd.)

(b) Sheets and Circles only. (Contd.)

8. Hussein Metal Rolling Mills,  
66/68, Narayan Dhru Street,  
P.O. Box 3092,  
Bombay 4.
9. Hindustan Metal Refining & Rolling Mills,  
124, Mint Street,  
Madras.
10. The Indian Smelting & Refining Co. Ltd.,  
Shale Building, G.P.O. Box No. 1258,  
Bank Street, Fort,  
Bombay.
11. Jagjivandas Narottamdas Metal Factory,  
110/112, North Brook Street,  
Bombay.
12. Jumnadas Brothers,  
195/1, Harrison Road,  
Calcutta.
13. Jeewanlal (1929) Ltd.,  
31, Netaji Subhas Road,  
P.O. Box. No. 2237,  
Calcutta.
14. Kamani Brothers Ltd.,  
Kamani Chambers,  
Nicol Road, Ballard Estate,  
Bombay.
- \*15. Talluthal Amichand Ltd.,  
554, Kansara Chawl, Kalbadevi Road,  
Bombay.
16. Metal Rolling Works Ltd.,  
104, Sion Matunga Estate,  
Sion 22.
17. Mysore Premier Pressing Works,  
124, Mint Street,  
Madras.
18. Oriental Metal Pressing Works,  
Opp. Mahalaxmi Railway Station,  
Bombay.
19. Patent Tiffin Carrier Sanghvi Co.,  
110, Shivaji Nagar,  
Poona 5.

## A. PRODUCERS: (Contd.)

## (b) Sheets and Circles only (Contd.)

20. Pitambardas Tallubhai & Co.,  
86, Kausara Chawl, Kalbadevi Road,  
Bombay.
- \*21. Rao Bahadur Anant Shivaji Desai Topiwalla,  
Moti Bazar,  
Bombay 2.
22. Shankar Aluminium Factory,  
Vidyapitha Road,  
Banaras Cantonment.
23. United Metal Works,  
Kanpur.

## (c) Foils.

- \*1. Venesta Limited,  
Post Box No. 55,  
Calcutta.

## (d) Cables.

- \*1. Aluminium Industries Ltd.,  
Kundara (S.I.Rly.),  
United State of Travancore-Cochin,  
South India.
2. The National Insulated Cable Co. Ltd.,  
Stephen House,  
4, Dalhousie Square,  
Calcutta.

## (e) Bauxite.

- \*1. Shevaroy Bauxite Products Co. Ltd.,  
Yercaud P.O.,  
Shevaroy Hills,  
Salem Junction, South India.

## (f) Paste and Powder.

- \*1. M/s. Jeewanlal (1929) Ltd.,  
Liberty Building,  
Marine Lines,  
Bombay.
2. M/s. M. Carberry Ltd.,  
104, Stephen House,  
Dalhousie Square,  
Calcutta.

## (g) Capsules.

- \*1. M/s. Alu Capsules Ltd.,  
J.K. Building,  
Dougall Road, Ballard Estate,  
Bombay.

## B. IMPORTERS:

1. Aluminium Castware Manufacturers' Association,  
Rajamundry.
- \*2. Aluminium Hindustan Ltd.,  
Bank of Baroda Building, Apollo Street,  
Fort, Bombay.
- \*3. Aluminium Union Ltd.,  
P.O. Box No. 700,  
Calcutta.
4. Bengal Agency & Stores Syndicate,  
P-12, Mission Row Extension,  
Calcutta.
5. H. Carberry Ltd.,  
104, Stephen House, Dalhousie Square,  
Calcutta.
- \*6. Imperial Chemical Industries (India) Ltd.,  
18, Strand Road, P.O. Box. No. 182,  
Calcutta.
7. J. Mahabeer & Co. Ltd.,  
Jama Masjid,  
Delhi.
- \*8. Jeewanlal (1929) Ltd.,  
31, Netaji Subhas Road,  
Calcutta.
- \*9. Kamani Brothers Ltd.,  
Kamani Chambers, Nicol Road, Ballard Estate,  
Bombay.
- \*\*10. Kheraj Velji,  
Phirozshah Street, P.O. Box 6913,  
Bombay 23.
- \*\*11. Indian Non-Ferrous Metals Manufacturers' Association,  
23-B, Netaji Subhas Road,  
Calcutta.
12. P. Kothary & Co.,  
16, Nalini Sett Road,  
Calcutta.
- \*13. P.C. Chatterjee & Co.,  
6, Mission Row,  
Calcutta 1.
14. Rose-Mark Rolling Mills & Industries,  
7-A, T.H. Road,  
Thiruvottiyur P.O.,  
Madras 19.

## B. IMPORTERS: (Contd.)

15. Seniram Dongarnall,  
138, Canning Street,  
Calcutta.
16. Samad & Co.,  
275/8, Bow Bazar Street,  
Calcutta.
17. Tea Chest Plywood Trades Association,  
P-11, Mission Row Extension,  
Calcutta.
- \*18. T.I. of India Ltd.,  
G.P.O. Box No. 6581,  
Calcutta.
19. Venesta Ltd.,  
Post Box No. 55,  
Calcutta.
20. Volkart Brothers,  
Graham Road, Ballard Estate, Fort,  
Bombay.
21. Wolverhampton Works Co. Ltd.,  
Bank of Baroda Building,  
Apollo Street, Fort,  
Bombay.
22. Western India Sheet Rollers' Association,  
Kamani Chambers, Nicol Road, Ballard Estate,  
Bombay.

## C. CONSUMERS:

- \*\*1. All India Non-Ferrous Metalware Manufacturers' Association,  
Bank of Baroda Building, Apollo Street, Fort,  
Bombay.
- \*2. Aluminium Manufacturing Co. Ltd.,  
56, Free School Street,  
Calcutta.
3. Aluminium Corporation of India,  
Kamala Tower,  
Kanpur.
- \*4. Agarwal Metal Works Ltd.,  
Rewari.
5. Acme Manufacturing Co. Ltd.,  
Construction House, Ballard Estate,  
Bombay.
6. American Oriental Trading Co.,  
P.O. Box No. 2521,  
Calcutta.

## C. CONSUMERS: (Contd.)

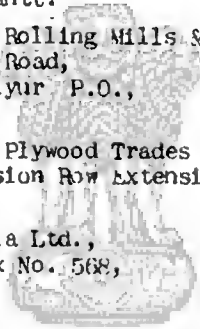
- \*7. Aluminium Castware Manufacturers' Association,  
Rajamundry.
- \*8. Aluminium Industries Ltd.,  
Ceramic Factory Road,  
Kundara,  
Travancore-Cochin State (South India).
- 9. Bengal Metal Works Ltd.,  
117/8, Chittaranjan Avenue (South),  
Calcutta.
- \*10. Balli Singh Bhagwan Singh,  
Bazar Kasera,  
Amritsar.
- 11. Bombay Brass & Metal Works,  
Panjra Pole, 2nd Street,  
Bombay.
- \*12. Bharat Metal Industries,  
Raipur (C.P.).
- 13. Devi Dayal & Sons,  
Tulsiram Gupta Mill Estate, Reay Road,  
Bombay 10.
- 14. Dhiraj Metal Works,  
P.O. Box No. 10,  
Rajkot.
- \*15. Deepak Mechanical & Metal Pressing Industries,  
Motilal Mansion,  
28, Apollo Street, Fort,  
Bombay.
- 16. English Aluminium Mart,  
63-65, Kansara Chawl, Kalbadevi Road,  
Bombay.
- \*17. Eastern Metal Works,  
102, Kalachowki Road,  
Bombay.
- \*\*18. Engineering Association of India,  
23-B, Netaji Subhas Road,  
Calcutta.
- 19. Gulamally Abdulhussein & Co.,  
66-68, Narayan Dhu Street,  
P.O. Box No. 3092,  
Bombay.
- 20. Ghasita Ram Metal Works,  
Grand Trunk Road,  
Batala.



## C. CONSUMERS: (Contd.)

21. Hukunchand Iswardas,  
167, Vital Peth,  
Poona 2.
- \*22. Jeewanlal (1929) Ltd.,  
31, Netaaji Subhas Road,  
Calcutta.
- \*23. Jannadas Brothers,  
69, Canning Street,  
Calcutta.
- \*24. Jagjiwandas Narottamdas Metal Factory,  
110-112, North Brook Street,  
Bombay.
- \*25. Kamani Brothers Ltd.,  
Kamani Chambers, Nicol Road, Ballard Estate,  
Bombay.
- \*26. Kathiawar Metal Works,  
Sihor (Kathiawar).
- \*27. Kheraj Velji,  
Phirozshah Street,  
P.O. Box. No. 6913,  
Bombay No. 23.
- \*28. Lallubhai Amichand,  
554, Kansara Chawl,  
Bombay.
- \*29. Mysore Premier Metal Factory,  
124, Mint Street,  
Madras.
- \*30. Madan Mohan Metal Industries,  
Dunddo Building, Kingsway,  
Secunderabad.
- \*31. Naran Lala Metal Works,  
Navsari.
- \*32. Natwarlal & Co.,  
Thakurdwar, Dhobiwadi,  
Bombay.
33. Oriental Metal Pressing Works,  
Opp. Mahaluxmi Railway Station,  
Bombay 11.
34. Pitambardas Lallubhai & Co.,  
86, Kansara Chawl, Kaibadevi Road,  
Bombay.

## C. CONSUMERS: (Contd.)

35. Patent Tiffin Carriers Sanghvi Co.,  
110, Shivaji Nagar,  
Poona 5.
36. P.C. Chatterjee & Co.,  
6, Mission Row,  
Calcutta.
37. Rao Bahadur Anant Shivaji Desai Topiwalla,  
Moti Bazar,  
Bombay 2.
38. Ram Kishan Metal Works,  
Batala.
39. Ratsons Metal Industries,  
Latsuche Road, P.O. Box No. 23,  
Kanpur.
40. Shankar Aluminium Factory,  
Vidyapitha Road,  
Banaras Cantt.
- \*41. 'Rose-Mar' Rolling Mills & Industries,  
7-A, T.H. Road,  
Thiruvottiyur P.O.,  
Madras 19.
42. Tea Chest & Plywood Trades Association,  
P-11, Mission Row Extension,  
Calcutta.
43. T.I. of India Ltd.,  
G.P.O. Box No. 568,  
Calcutta.
- \*44. Venesta Ltd.,  
P.O. Box No. 55,    
Calcutta.
- \*45. Wolverhampton Works Co. Ltd.,  
Bank of Baroda Building, Apollo Street, Fort,  
Bombay 1.
- \*46. Western India Sheet Rollers' Association,  
Kamani Chambers, Nicol Road, Ballard Estate,  
Bombay.

## D. DIRECTORS OF INDUSTRIES/STATE GOVERNMENTS AND ADMINISTRATIONS:

1. Director of Industries,  
(Directorate of Rural Development),  
Government of Assam,  
Shillong.
2. Director of Industries,  
Government of Bihar,  
Patna.

**D. DIRECTORS OF INDUSTRIES/STATE GOVERNMENTS AND  
ADMINISTRATIONS: (Contd.)**

- \*\*3. Director of Industries,  
Government of Madhya Pradesh,  
Nagpur.
4. Director of Industries,  
Government of Orissa,  
Cuttack.
- \*\*5. Director of Cottage Industries,  
Government of Uttar Pradesh,  
Kanpur.
6. Director of Industries,  
Government of West Bengal,  
Calcutta.
7. Director of Industries,  
Government of Madras,  
Madras.
- \*\*8. Director of Industries & Statistics Authority,  
Government of Bombay,  
Bombay.
- \*\*9. Director of Industries,  
Government of East Punjab,  
Jullundur.
10. Chief Secretary to the Government of Madhya Bharat,  
Gwalior.
11. Chief Secretary to the Government of Mysore,  
Bangalore.
12. Chief Secretary to the Government of Hyderabad,  
Hyderabad Dn.
13. Chief Secretary to the Government of Saurashtra,  
Rajkot.
14. Chief Secretary to the Government of Rajasthan,  
Jaipur.
15. Chief Secretary to the Government of Travancore-Cochin,  
Trivandrum.
- \*\*16. Chief Secretary to the Government of Patiala  
& East Punjab States Union,  
Patiala.
17. Chief Commissioner of Vindhya Pradesh,  
Rewa.
18. Chief Commissioner of Himachal Pradesh,  
Simla.

D. DIRECTORS OF INDUSTRIES/STATE GOVERNMENTS AND  
ADMINISTRATIONS: (Contd.).

19. Chief Commissioner,  
Bilaspur.
- \*\*20. Chief Commissioner,  
Delhi.
21. Chief Commissioner of Tripura,  
Agartala.
22. Chief Commissioner,  
Manipur.
23. Chief Commissioner of Kutch,  
Bhuj.
24. Chief Commissioner,  
Bhopal.
25. Chief Commissioner of Ajmer-Merwara,  
Ajmer.
26. Chief Commissioner,  
Cooch Bihar.
27. Chief Commissioner of Coorg,  
Mercara.
- \*\*28. Principal Secretary to the Government of  
Jammu & Kashmir,  
Srinagar.

In addition to the above the Board has also received  
Memoranda from:

- (i) The General Manager,  
Government Housing Factory,  
New Delhi.
- (ii) The Directorate General of Industries & Supplies,  
New Delhi.
- (iii) The Director,  
Geological Survey of India,  
Calcutta.
- (iv) The Chairman,  
Central Electricity Commission,  
Ministry of Works, Mines & Power,  
Simla.

E. INDIAN GOVERNMENT TRADE COMMISSIONERS ABROAD:

- \*1. The Commercial Adviser to the High Commissioner for  
India in the U.K.,  
India House, Aldwych,  
London, W.C.2.
2. The Consul General of India in New York,  
3, East 64th Street,  
New York, 21 (U.S.A.).

## E. INDIAN GOVERNMENT TRADE COMMISSIONERS ABROAD: (Contd.)

- \*3. The India Government Trade Commissioner,  
Royal Bank Building,  
Toronto, Canada.
- \*4. The Commercial Secretary to the Indian Embassy in France,  
7, Avenue Kleber,  
Paris 16(c), France.
- \*5. The Commercial Counsellor,  
The Indian Liaison Mission,  
Empire House, (Nagai Building),  
Tokyo, Japan.
- 6. The Economic Adviser,  
Indian Military Mission,  
609, H.Q., C.G.E. (B.E.),  
Hamburg, B.A.O.R. 3, Germany.
- 7. The Second Commercial Attache,  
Indian Military Mission,  
108, Oberlinden,  
Frankfurt/Main, Germany.
- \*8. The Commercial Secretary,  
Legation of India,  
Stranderagen, 47, IV,  
Stockholm, Sweden.
- \*9. The Commercial Secretary,  
Legation of India,  
18, Jungfraustrasse,  
Berne, Switzerland.

## F. CHAMBERS OF COMMERCE:

- 1. Andhra Chamber of Commerce,  
Angappa Naik Street,  
G.T., Madras.
- 2. Southern India Chamber of Commerce,  
Indian Chamber Building,  
North Beach,  
Madras.
- 3. Hindustan Chamber of Commerce,  
11/12, Car Street,  
China Bazar, Madras.
- 1. Indian Merchants' Chamber,  
1, Back Bay Reclamation, Fort,  
Bombay.
- 5. All India Manufacturers' Organization,  
Industrial Assurance Building,  
Churchgate Street, Bombay.
- 6. Orissa Chamber of Commerce,  
P.O. Chandani Chowk,  
Cuttack.

② Only the names of those Chambers of Commerce that have sent Memoranda are given above.

APPENDIX IV  
(Vide paragraphs 5 and 7)

*Statement showing the dates of visit to factories by the President, Members and other Officers of the Board.*

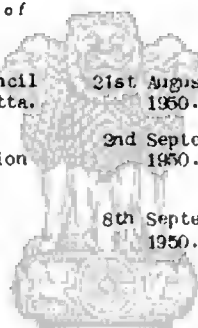
| Sl. No. | Name and location of the factory                                                                                                            | Date of visit         | By whom visited                                             |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------|
| 1       | 2                                                                                                                                           | 3                     | 4                                                           |
| 1.      | Indian Aluminium Co. Ltd., Reduction Works (Smelter), Alupuram, Alwaye Rly. Station (S.I.R.), United States of Travancore & Cochin.         | 26th September, 1950. | President, Dr. Naidh, Shri R.N. Kapur and Shri N. Krishnan. |
| 2.      | Indian Aluminium Company Ltd., Rolling Mills, Belur, Howrah Railway Station (E.I.R.), West Bengal.                                          | 7th October, 1950.    | President, Dr. Naidh, and Shri B.N. Adarkar.                |
| 3.      | Jeevanlal (1929) Ltd., (engaged in the manufacture of utensils), Belur, Howrah Rly. Station (E.I.R.), West Bengal.                          | 7th October, 1950.    | President, Dr. Naidh and Shri B.N. Adarkar.                 |
| 4.      | Indian Aluminium Co. Ltd., Bauxite Mines, Bagru Hills, Loharlaga Rly. Station (B.N.R.), Bihar.                                              | 8th October, 1950.    | President, Dr. Naidh and Shri B.N. Adarkar.                 |
| 5.      | Indian Aluminium Co. Ltd., Alumina Works, Chota Muri, Muri Junction Rly. Station (B.N.R.), Bihar.                                           | 9th October, 1950.    | President, Dr. Naidh and Shri B.N. Adarkar.                 |
| 6.      | Indian Aluminium Corporation Ltd., (Mines, Works, Mills), P.O. Jaykaynagar, District Burdwan, Near Asan Rly. Station (E.I.R.), West Bengal. | 10th October 1950.    | President, Dr. Naidh and Shri B.N. Adarkar.                 |
| 7.      | M/s. Venesta Ltd., (engaged in the production of Aluminium foils), Calcutta.                                                                | 11th October, 1950.   | President, Dr. Naidh and Shri B.N. Adarkar.                 |

*Indian Aluminium Co. Ltd.*

|                                                                                                     |                       |                                       |
|-----------------------------------------------------------------------------------------------------|-----------------------|---------------------------------------|
| (i) Head office, 5, Council House Street, Calcutta.                                                 | 18th August, 1950.    | Shri R.N. Kapur and Shri N. Krishnan. |
| (ii) Rolling Mills, Belur, Howrah Rly. Station (E.I.R.), West Bengal.                               | 30th August, 1950.    | -Do-                                  |
| (iii) Alumina Works, Chota Muri, Muri Junction Rly. Station (B.N.R.), Bihar.                        | 1st September, 1950.  | -Do-                                  |
| (iv) Bauxite Mines, Bagri Hills, Lohardaga Rly. Station (B.N.R.), Bihar.                            | 3rd September, 1950.  | -Do-                                  |
| (v) Reduction Works (Smelter), Alupuram, Alwaye Rly. Station, United States of Travancore & Cochin. | 21st September, 1950. | -Do-                                  |

*The Aluminium Corporation of India Ltd.*

|                                                                |                      |                                       |
|----------------------------------------------------------------|----------------------|---------------------------------------|
| (i) Head office, 7, Council House Street, Calcutta.            | 21st August, 1950.   | Shri R.N. Kapur and Shri N. Krishnan. |
| (ii) Kumar Mines, Near Lohardaga Rly. Station (B.N.R.), Bihar. | 2nd September, 1950. | -Do-                                  |
| (iii) (Works) P.O. Jaykaynagar, Bardwan District, West Bengal. | 8th September, 1950. | -Do-                                  |



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APPENDIX V  
(Vide paragraph 8)

*List of persons and bodies who attended the Board's Public  
Inquiry and the dates on which they were examined.*

17th October, 1950.

PRODUCERS:

|                                 |   |              |                                                                                                    |
|---------------------------------|---|--------------|----------------------------------------------------------------------------------------------------|
| (1) Mr. K.C. Mahindra           | } | Representing | Indian Aluminium Co. Ltd.,<br>5, Council House Street,<br>Calcutta 1.                              |
| (2) Mr. J.W. Cameron            |   |              |                                                                                                    |
| (3) Mr. J.W.E. Johnson          |   |              |                                                                                                    |
| (4) Mr. A.L. Sabharwal          |   |              |                                                                                                    |
| (5) Mr. A. Subram               |   |              |                                                                                                    |
| (6) Lala Lakshipat<br>Singhania | } | Representing | Aluminium Corporation of<br>India Ltd., 7, Council<br>House Street, Calcutta.                      |
| (7) Mr. S.C. Jain               |   |              |                                                                                                    |
| (8) Mr. L. Gupta                |   |              |                                                                                                    |
| (9) Mr. R.K. Ojha               |   |              |                                                                                                    |
| (10) Mr. T.V. Subramanyam       |   |              |                                                                                                    |
| (11) Mr. S. Mahalingam          | } | Representing | Indian Non-Ferrous Metals<br>Manufacturers' Association,<br>23-B, Netaji Subhas Road,<br>Calcutta. |
| (12) Mr. G.L. Gabriel           |   |              |                                                                                                    |

HOLLERS:

|                   |              |                                                                                                                                    |
|-------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------|
| (1) Mr. G. Gupta  | Representing | Western India Sheet Rollers'<br>Association, Kamani Chambers,<br>Nicol Road, Ballard Estate,<br>Bombay 1.                          |
| (2) Mr. K.G. Shah | presenting   | Kamani Brothers Ltd.,<br>Kamani Chambers, Nicol Road,<br>Ballard Estate, Bombay 1.                                                 |
| (3) Mr. Gopaldas  | Representing | Devi Dayal & Sons and<br>Gupta Rolling Mills and<br>Refineries, Tulsiram Gupta<br>Mills, Estate, Mazgaon,<br>Reay Road, Bombay 10. |

MANUFACTURERS OF FOILS:

|                         |              |                                                |
|-------------------------|--------------|------------------------------------------------|
| (1) Mr. T.L. Holdsworth | Representing | Venesta Ltd.,<br>Post Box No. 55,<br>Calcutta. |
|-------------------------|--------------|------------------------------------------------|



## IMPORTERS:

|                              |   |              |                                                                                          |
|------------------------------|---|--------------|------------------------------------------------------------------------------------------|
| (1) Rai Bahadur<br>H.K. Shah | } | Representing | Jogwanlal (1929) Ltd.,<br>31, Netaji Subhas Road,<br>Calcutta.                           |
| (2) Mr. C.P. Bhat            |   |              |                                                                                          |
| (3) Mr. H.A. Moore           |   | Representing | Aluminium Union Ltd.,<br>41, Chowringhee,<br>Calcutta 16.                                |
| (4) Mr. P.O.S. Ralph         |   | Representing | Aluminium Hindustan Ltd.,<br>Bank of Baroda Building,<br>Apollo Street, Fort,<br>Bombay. |

## CONSUMERS:

|                        |   |              |                                                                                                                                     |
|------------------------|---|--------------|-------------------------------------------------------------------------------------------------------------------------------------|
| (1) Mr. P.O.S. Ralph   |   | Representing | Aluminium Manufacturing Co.<br>Ltd., 56, Free School Street,<br>Calcutta 16.                                                        |
| (2) Mr. D.V. Samant    |   | Representing | Rao Bahadur Anant Shivaji<br>Desai Topiwalla, Moti Bazar,<br>Bombay 2.                                                              |
| (3) Mr. R.G. Thakur    |   | Representing | Wolverhampton Works Co. Ltd.,<br>Bank of Baroda Building,<br>Apollo Street, Fort, Bombay.                                           |
| (4) Mr. A.E. Domingo   |   | Representing | Lallubhai Amichand Ltd.,<br>554, Kansara Chawl, Bombay.                                                                             |
| (5) Mr. B.K. Thakoor   | } | Representing | Oriental Metal Pressing<br>Works, Opp. Mahalaxmi Rly.<br>Station, Bombay 11.                                                        |
| (6) Mr. G.D. Thakoor   |   |              |                                                                                                                                     |
| (7) Mr. R.M. Shah      | } | Representing | All India Non-ferrous Metal-<br>ware Manufacturers' Asso-<br>ciation, Bank of Baroda<br>Building, Apollo Street,<br>Fort, Bombay 1. |
| (8) Mr. J.F. Fernandez |   |              |                                                                                                                                     |
| (9) Mr. B.P. Shah      |   | Representing | Aluminium Castware Manu-<br>facturers' Association,<br>Rajahmundry.                                                                 |

## OTHERS:

|                         |   |              |                                                                                |
|-------------------------|---|--------------|--------------------------------------------------------------------------------|
| (1) Mr. J. Satyanarayan | } | Representing | Andhra Chamber of Commerce,<br>Madras 1.                                       |
| (2) Mr. J.P. Sangraika  |   |              |                                                                                |
| (3) Mr. K.K. Shah       |   | Representing | Hindustan Chamber of Com-<br>merce, 11/12, Car Street,<br>China Bazar, Madras. |

## OFFICIALS:

(1) Mr. H.S. Kulkarni

Deputy Chief Engineer  
(Utilization), Central  
Electricity Commission,  
'Claremont', Simla 4.

(2) Dr. B.C. Roy

Superintendent Geologist,  
Western Circle, Geological  
Survey of India, Botawalla  
Chambers, Sir Phirozshah  
Mehta Road, Fort, Bombay.

18th October, 1950 and 21st October, 1950 (Morning).

## PRODUCERS:

- (1) Mr. K.C. Mahindra
- (2) Mr. J.W. Cameron
- (3) Mr. J.C.W. Johnson
- (4) Mr. A.L. Sabharwal
- (5) Mr. A. Subram

Representing

Indian Aluminium Co. Ltd.,  
5, Council House Street,  
Calcutta.

## OFFICIALS:

\*Mr. H.S. Kulkarni

Deputy Chief Engineer  
(Utilization), Central  
Electricity Commission,  
'Claremont', Simla 4.

\*Dr. B.C. Roy

Superintendent Geologist,  
Western Circle, Geological  
Survey of India, Botawalla  
Chambers, Sir P.M. Road,  
Fort, Bombay.

19th October, 1950, 21st October, 1950 (afternoon) and 23rd October, 1950.

## PRODUCERS:

- (1) Lala Lakshminpat  
Singhania
- (2) Mr. S.C. Jain
- (3) Mr. Subramanyam
- (4) Mr. L. Gupta
- (5) Mr. Mahalingam
- (6) Mr. Ojha

Representing,

Aluminium Corporation of  
India Ltd., 7, Council  
House Street, Calcutta.

OFFICIALS:

\*Mr. H.S. Kulkarni

Deputy Chief Engineer  
(Utilization), Central  
Electricity Commission,  
'Cleremout', Simla 4.

\*Dr. B.C. Roy

Superintendent Geologist,  
Western Circle, Geological  
Survey of India, Botawalla  
Chambers, Sir P.M. Road,  
Fort, Bombay 1.

(\* did not attend on 21st and 23rd October, 1950)

24th October, 1950.

Mr. Manu Subedar  
(Liberty Building,  
Marine Lines,  
Bombay.).

30th October, 1950.

Mr. K.K. Nasta

General Manager,  
Government Housing Factory  
(Government of India,  
Ministry of Health),  
New Delhi.



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APPENDIX VI  
(Vide paragraph 10)

WORLD PRODUCTION OF ALUMINIUM

Primary output as reported by U.S. Bureau of Mines, in metric tons of 2,204.6 pounds.

(Source of information: METAL STATISTICS, 1950)

| S. No. | Name of the country.              | 1939    | 1940    | 1941      | 1942      | 1943      | 1944      | 1945    | 1946    | 1947      | 1948      | 1949    | Present production per year. +                                                                                      |
|--------|-----------------------------------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|-----------|-----------|---------|---------------------------------------------------------------------------------------------------------------------|
| 1.     | United States                     | 148,367 | 187,136 | 280,383   | 472,737   | 634,768   | 704,376   | 449,109 | 371,608 | 518,680   | 565,587   |         |                                                                                                                     |
| 2.     | Canada                            | 75,152  | 99,014  | 194,023   | 308,982   | 449,734   | 419,176   | 195,691 | 175,449 | 271,302   | 333,007   |         |                                                                                                                     |
| 3.     | France                            | 52,500  | 61,740  | 63,915    | 45,224    | 46,462    | 26,154    | 37,225  | 47,952  | 53,225    | 46,785    | 156,950 | 95,000 tons.                                                                                                        |
| 4.     | Switzerland                       | 28,000  | 28,300  | 25,588    | 23,665    | 18,536    | 9,686     | 5,029   | 13,083  | 18,439    | 18,960    |         | Ingots                                                                                                              |
| 5.     | Germany                           | 200,000 | 204,783 | 212,266   | 227,131   | 203,058   | 191,000   | 20,000  | -       | -         | 7,306     | 332,804 | metric tons.                                                                                                        |
|        | (including production of Austria) |         |         |           |           |           |           |         |         |           |           |         |                                                                                                                     |
| 6.     | England                           | 25,000  | 19,264  | 23,030    | 47,538    | 56,537    | 96,063    | 32,432  | 32,057  | 29,384    | 30,510    |         | 30,000 tons                                                                                                         |
| 7.     | Sweden                            | 1,966   | 1,563   | 1,094     | 1,294     | 3,572     | 3,723     | 3,236   | 3,566   | 2,892     | 3,500     |         | virgin aluminium and 220,000 tons                                                                                   |
| 8.     | Italy                             | 34,200  | 36,790  | 46,195    | 43,541    | 46,192    | 16,796    | 4,317   | 11,040  | 25,084    | 33,100    |         | fabricated aluminium (120,000 tons - sheets and circles) included.                                                  |
| 9.     | U.S.S.R.                          | 73,000  | 59,940  | 66,400    | 55,000    | 62,340    | 71,000    | 86,310  | 105,000 | 120,000   | 140,000   |         | 55,000 tons per year (Ingots 25,000 tons, sheets and circles 25,000 tons and other aluminium production 5,000 tons. |
| 10.    | Japan                             | 23,000  | 30,620  | 56,080    | 85,211    | 114,087   | 88,254    | 16,450  | 3,190   | 2,700     | 6,970     |         |                                                                                                                     |
| 11.    | India                             | -       | -       | -         | -         | 1,292     | 1,751     | 2,254   | 3,241   | 3,223     | 3,367     |         |                                                                                                                     |
| 12.    | Other countries                   | 35,938  | 55,850  | 71,026    | 89,687    | 115,432   | 103,046   | 16,917  | 25,801  | 39,072    | 57,908    |         |                                                                                                                     |
| 13.    | Total                             | 697,143 | 787,009 | 1,042,000 | 1,460,000 | 1,952,000 | 1,873,006 | 869,000 | 797,000 | 1,098,000 | 1,285,000 |         |                                                                                                                     |

(1) \*Tons of 2,000 pounds

(2) The Statistics have been obtained from the Government of Canada publication "The Primary Report on Mineral Production 1949".

(3) + Figures obtained from Indian Trade Commissioners abroad.

APPENDIX VII(a)  
(Vide paragraph 50)

*Statement showing the annual rated capacity and actual production of aluminium ingots, aluminium sheets, circles and slabs of the Indian Aluminium Company Ltd. and the Aluminium Corporation of India Ltd.*

| Name of the product             | Year    | The Indian Aluminium Co. Ltd.   |                             | The Aluminium Corporation of India Ltd. |                             |
|---------------------------------|---------|---------------------------------|-----------------------------|-----------------------------------------|-----------------------------|
|                                 |         | Annual rated capacity (in tons) | Actual production (in tons) | Annual rated capacity (in tons)         | Actual production (in tons) |
| (1) Aluminium Ingots.           | 1945-46 | -                               | -                           | 2000                                    | 1070                        |
|                                 | 1946-47 | 2500                            | 1995                        | -Do-                                    | 1511.5                      |
|                                 | 1947-48 | 2500                            | 2172                        | -Do-                                    | 951.4                       |
|                                 | 1948-49 | 2500                            | 2347                        | -Do-                                    | 1265.8                      |
|                                 | 1949-50 | 2500                            | 1679 (for 9 months)         | -Do-                                    | 1276.3                      |
| (2) Aluminium Sheets & Circles. | 1945-46 | -                               | -                           | 450/500                                 | 75                          |
|                                 | 1946-47 | 2500                            | 2163                        | -Do-                                    | 217                         |
|                                 | 1947-48 | 2500                            | 2016                        | -Do-                                    | 211                         |
|                                 | 1948-49 | 3300                            | 2284                        | -Do-                                    | 448                         |
|                                 | 1949-50 | 3300                            | 1646 (for 9 months)         | -Do-                                    | 431                         |
| (3) Slabs.                      | 1948-49 | -                               | 432                         | Nil                                     | Nil                         |
|                                 | 1949-50 | -                               | 228 (for 9 months)          | Nil                                     | Nil                         |

**APPENDIX VII(b)**  
(vide paragraph 69)

**SHEET-SHEET SHOWING THE ANNUAL RATED CAPACITY, ACTUAL PRODUCTION ETC. OF ALUMINIUM SHEETS AND CIRCLES BY SOME OF THE PRODUCERS**

| Sl. No. | Name and address of the factory                                                                       | Location                                   | Date of commencement of production | Total capital invested by the firm                        | Total No. of workers employed by the firm in this industry | Annual rated capacity                                      | Actual production                               |                                              |                                        |                             |          | Remarks                                                                                                                                                                                                                                                      |
|---------|-------------------------------------------------------------------------------------------------------|--------------------------------------------|------------------------------------|-----------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|-------------------------------------------------|----------------------------------------------|----------------------------------------|-----------------------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |                                                                                                       |                                            |                                    |                                                           |                                                            |                                                            | 1945-46                                         | 1946-47                                      | 1947-48                                | 1948-49                     | 1949-50  |                                                                                                                                                                                                                                                              |
| 1.      | M/s. Indian Aluminium Co. Ltd., Bellary Sheet Mill, 414, Grand Trunk Road, P.O. Bellary Mach. Horwar. | Bellary, Horwar District, West Bengal.     | July, 1941                         | Rs. 50,00,000 (as at 31-12-1946) Sept., 1946).            | 402 (Average as at 31-12-1946)                             | 2500 tons for 1946-47 and 1947-48 and 1948-49 and 1949-50. | 2318 tons (for year ending 31-12-1947)          | 2156 tons (for year ending 31-12-1948)       | 2087 tons (for year ending 31-12-1949) | 1946 tons (for nine months) |          | Remarks                                                                                                                                                                                                                                                      |
| 2.      | The Aluminium Corporation of India Ltd., P.O. Jaykynagar, District Burdwan, West Bengal.              | P.O., Jaykynagar, near Asansol, Burdwan.   | Product since 1947-1948.           | 474-48 cap- ital Rs. 90,00,000                            | 4172 excluding 3000 work- ers & super- clerical staff.     | 450 to 500 tons.                                           | 75 tons                                         | 217 tons                                     | 211 tons                               | 438 tons                    | 431 tons |                                                                                                                                                                                                                                                              |
| 3.      | M/s. Asant Sanyal Desai, Topikwala, Metal Works, Balnagar, Calcutta, West Bengal.                     | Balnagar, Calcutta.                        | June, 1942.                        | Rs. 2,50,361                                              | 100                                                        | 3700 tons (a)                                              | 505.5 tons (for year 1947)                      | 231.3 tons (for year 1948)                   | 2245.0 tons (for year 1949)            |                             |          | (a) Figure relates to Aluminium Circles.                                                                                                                                                                                                                     |
| 4.      | M/s. Lalubhai Aschard Ltd., The Dan Alumina- tum Factory, Bombay.                                     | 228/7 Tardoo Road, P.O. Box, 4075, Bombay. | December, 1946.                    | Rs. 5,11,000 (Subscribed capital and paid-up capital) (c) | 311 (c)                                                    | 1900 tons (b) 167 tons (c) (b)                             | 489 tons (during the period 1947-48 to 1948-49) | 2148 tons (for year ending 31st Oct., 1949). |                                        |                             |          | (b) The figures relate to circles which are resis- (c) Plants started in late to the end of 1948.                                                                                                                                                            |
| 5.      | M/s. Devi Doyal & Sons, Nalraim Doyal Mills, Estate, Darbhanga, Bombay 10.                            | Darbhanga, Bihar, India.                   | 1934                               |                                                           | 200                                                        | 21000 tons 31000 tons                                      |                                                 |                                              |                                        |                             |          | 50 to 55 tons per month over to Brass and Copper for work. It has been started working aluminium. The mill is fully running department- ally do feed them. They roll copper and brass and their produc- tion of alumin- um is very irregular. Same as above. |
| 6.      | M/s. Jeemania Ltd., Calcutta.                                                                         |                                            |                                    |                                                           |                                                            | 429 tons 9550 tons                                         |                                                 |                                              |                                        |                             |          |                                                                                                                                                                                                                                                              |
| 7.      | M/s. Guntanai Abdul Hussain and Company, 95-98, Narayan Tharu Street, Bombay.                         |                                            |                                    |                                                           |                                                            | 3640 tons                                                  |                                                 |                                              |                                        |                             |          |                                                                                                                                                                                                                                                              |
| 8.      | M/s. Metal Rolling Works Ltd., Bombay.                                                                |                                            |                                    |                                                           |                                                            | 51300 tons                                                 |                                                 |                                              |                                        |                             |          |                                                                                                                                                                                                                                                              |
| 9.      | Indian Metal and Metal- logical Corporation, 498, Mint Street, Madras.                                | Mettur dam, Salem Dist., Madras.           | 1945                               | Rs. 15,00,000                                             | 225                                                        | 81500 tons 4950 tons 11260 to 11310.                       | 40189 tons (for the year 1948)                  | 4645 tons (for the year 1949)                |                                        |                             |          | Production is not regular.                                                                                                                                                                                                                                   |

\* Information furnished by the Indian Non-ferrous Metal Manufacturers' Association, Calcutta.  
 † Information furnished by the Director General of Industries and Supplies, New Delhi.

APPENDIX VII(c)  
(vide paragraph 50)

STATEMENT SHOWING THE CONSUMPTION OF ALUMINIUM SHEETS, CIRCLES AND CASTINGS  
BY SOME OF THE INDIGENOUS MANUFACTURERS

| Name of the fabricator                                         | Imported<br>(Tons) | Indigenous<br>(Tons) | Total<br>(Tons) |
|----------------------------------------------------------------|--------------------|----------------------|-----------------|
| 1. M/s. Mahan Mohan Metal Industries, Secunderabad.            | 40                 | 20                   | 60              |
| 2. M/s. Agarwal Metal works, Ltd., Rewari.                     | -                  | 50                   | 50              |
| 3. M/s. Rose-Mark Rolling Mills & Industries, Madras 19.       | 6.70               | 2.23                 | 8.93            |
| 4. M/s. Jagjivandas Narottandas Metal Factory, Bombay 4.       | -                  | -                    | 50 to 60 (f)    |
| 5. M/s. Deepak Mechanical & Metal Pressing Industries, Bombay. | 110                | -                    | 110             |
| 6. M/s. Eastern Metal Works, Bombay.                           | 55                 | -                    | 55              |
| 7. M/s. Natwarlal & Co., Bombay.                               | 180                | 20                   | 200             |
| 8. M/s. The Aluminium Manufacturing Co., Calcutta.             | 1,200              | 360                  | 1,560           |
| 9. M/s. The Wolverhampton Works Co. Ltd., Bombay.              | 168.5              | 2.7                  | 171 (a)         |
| 10. M/s. Jeewanlal (1929) Ltd., Calcutta.                      | 2,119              | 1,002.5              | 3,121.5 (b)     |
| 11. M/s. The Mysore Premier Metal Factory, Madras.             | 581.75             | 31.36                | 613.1 (c)       |
| 12. M/s. Naran Lal Metal Works, Navsari.                       | -                  | -                    | 13.0 (d)        |
| 13. M/s. Jammadas Brothers, Calcutta.                          | -                  | -                    | 22,000          |
| 14. M/s. Lallubhai Amichand Ltd., Bombay.                      | 171.5              | -                    | 171.5 (e)       |
| 15. M/s. Balli Singh Bhagwan Singh, Amritsar.                  | -                  | -                    | 25 (e)          |
| 16. M/s. Bharat Metal Industries, Raipur (C.P.).               | 100                | 880                  | 980             |
| TOTAL                                                          |                    |                      | 9,052.24        |

(a) Average during 1948 and 1949.

(b) Average of ingots, sheets and circles during 1945 to 1949.

(c) Average during 1947 to 1949.

(d) Average during 1945 to 1949.

(e) Ingots.

(f) Scrap metals.

\* Figure relates to the manufacturing capacity per year but due to shortage of supply of metals, they are compelled to manufacture what they get.

STATISTICAL BUREAU OF CAPITAL, INVESTED, ANNUAL RATED CAPACITY AND ACTUAL PRODUCTION OF THE FACTORIES MANUFACTURING ALUMINUM PRODUCTS

[illegible]



APPENDIX VIII (a)  
(vide paragraph 52)

STATEMENT SHOWING IMPORTS INTO INDIA OF ALUMINIUM INGOTS, CIRCLES, SHEETS AND OTHER MANUFACTURES OF ALUMINIUM FROM 1944-45 TO SEPTEMBER 1950

| Origin of Import                                | 1944-45          |              | 1945-46          |              | 1946-47          |              | 1947-48          |              | 1948-49                                |              | 1949-50          |              | 1950-51 (to Septem-<br>ber 1951) |              |
|-------------------------------------------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|----------------------------------------|--------------|------------------|--------------|----------------------------------|--------------|
|                                                 | Quantity<br>Tons | Value<br>Rs. | Quantity<br>Tons | Value<br>Rs. | Quantity<br>Tons | Value<br>Rs. | Quantity<br>Tons | Value<br>Rs. | Quantity<br>Tons                       | Value<br>Rs. | Quantity<br>Tons | Value<br>Rs. | Quantity<br>Tons                 | Value<br>Rs. |
| <b>(c) ALUMINIUM INGOTS, BLOOMS, RUNS, ETC.</b> |                  |              |                  |              |                  |              |                  |              |                                        |              |                  |              |                                  |              |
| (a) U.K.                                        | 1.00             | 2,304        | 1729.60          | 21,50,794    | 230.00           | 3,02,915     | 5.95             | 17,993       | Information not available countrywise. |              |                  |              |                                  |              |
| (b) Canada                                      | 490.00           | 7,52,248     | 905.40           | 10,59,623    | 79,91,396        | 2531.95      | 32,06,302        | 38,00,000    | 58,00,000                              | 58,00,000    | 58,00,000        | 58,00,000    | 58,00,000                        | 58,00,000    |
| (c) U.S.A.                                      | 440.00           | 9,35,313     | 140.00           | 5,36,071     | 100.35           | 27,594       | 5.40             | 8,491        | 15.00                                  | 24,207       | 11,90,30         | 50,131,317   | 50,131,317                       | 50,131,317   |
| (d) Other countries                             | 5.98             | 13,19,919    | 3.15             | 1,49,591     | 73,85.45         | 82,71,529    | 18,22.45         | 37,02,007    | 5,87,535                               | 15.00        | 24,207           | 11,90,30     | 50,131,317                       | 50,131,317   |
| Total.                                          | 935.98           | 14,02,874    | 3079.15          | 37,93,115    | 73,85.45         | 82,71,529    | 18,22.45         | 37,02,007    | 5,87,535                               | 15.00        | 24,207           | 11,90,30     | 50,131,317                       | 50,131,317   |
| <b>(d) ALUMINIUM SHEETS</b>                     |                  |              |                  |              |                  |              |                  |              |                                        |              |                  |              |                                  |              |
| (a) U.K.                                        | 209.95           | 7,06,917     | 892.00           | 16,51,513    | 237.90           | 5,79,214     | 539.85           | 12,78,115    | Information not available countrywise. |              |                  |              |                                  |              |
| (b) Canada                                      | —                | —            | 17.15            | 11,102       | 238.30           | 4,84,940     | 693.00           | 18,05,249    | 20,91.15                               | 59,35,015    | 12,97,00         | 34,79,593    | 353.95                           | 11,90,30     |
| (c) U.S.A.                                      | —                | —            | —                | —            | 827.20           | 11,71,151    | 1315.55          | 44,85,857    | 20,91.15                               | 59,35,015    | 12,97,00         | 34,79,593    | 353.95                           | 11,90,30     |
| (d) Other countries                             | 209.95           | 7,06,917     | 827.05           | 16,92,915    | 237.90           | 5,79,214     | 539.85           | 12,78,115    | 20,91.15                               | 59,35,015    | 12,97,00         | 34,79,593    | 353.95                           | 11,90,30     |
| Total.                                          | 419.90           | 14,13,834    | 1646.30          | 33,55,528    | 475.20           | 11,59,115    | 1079.70          | 25,61,277    | 41,02.30                               | 1,17,50,550  | 25,01.00         | 72,13,110    | 707.90                           | 22,13,110    |
| <b>(e) ALUMINIUM CLIPS</b>                      |                  |              |                  |              |                  |              |                  |              |                                        |              |                  |              |                                  |              |
| (a) U.K.                                        | —                | —            | 1114.40          | 23,41,040    | 234.00           | 5,79,214     | 539.85           | 12,78,115    | Information not available countrywise. |              |                  |              |                                  |              |
| (b) Canada                                      | 99.90            | 2,17,920     | 24.40            | 7,06,917     | 238.30           | 4,84,940     | 693.00           | 18,05,249    | 20,91.15                               | 59,35,015    | 12,97,00         | 34,79,593    | 353.95                           | 11,90,30     |
| (c) U.S.A.                                      | 9.90             | 23,529       | 40.40            | 11,102       | 827.20           | 11,71,151    | 1315.55          | 44,85,857    | 20,91.15                               | 59,35,015    | 12,97,00         | 34,79,593    | 353.95                           | 11,90,30     |
| (d) Other countries                             | —                | —            | —                | —            | —                | —            | —                | —            | 20,91.15                               | 59,35,015    | 12,97,00         | 34,79,593    | 353.95                           | 11,90,30     |
| Total.                                          | 109.60           | 2,54,945     | 1389.55          | 29,54,945    | 475.20           | 11,59,115    | 1079.70          | 25,61,277    | 41,02.30                               | 1,17,50,550  | 25,01.00         | 72,13,110    | 707.90                           | 22,13,110    |
| <b>(f) OTHER ALUMINIUM MANUFACTURES</b>         |                  |              |                  |              |                  |              |                  |              |                                        |              |                  |              |                                  |              |
| (a) U.K.                                        | 5.85             | 29,398       | 81.55            | 1,79,970     | 647.00           | 30,23,293    | 1323.80          | 43,35,318    | Information not available countrywise. |              |                  |              |                                  |              |
| (b) Canada                                      | —                | —            | —                | —            | 100.50           | 1,74,923     | 994.35           | 31,08,151    | 17,03.45                               | 49,90,499    | 1,27,13,510      | 19,01.75     | 41,72,011                        | 41,72,011    |
| (c) U.S.A.                                      | —                | —            | 90.45            | 3,53,925     | 111.25           | 5,40,025     | 246.55           | 19,125       | 17,03.45                               | 49,90,499    | 1,27,13,510      | 19,01.75     | 41,72,011                        | 41,72,011    |
| (d) Australia                                   | —                | —            | —                | —            | 22.45            | 1,11,000     | 3.80             | 31,892       | 17,03.45                               | 49,90,499    | 1,27,13,510      | 19,01.75     | 41,72,011                        | 41,72,011    |
| (e) Netherlands                                 | —                | —            | —                | —            | —                | —            | 52.15            | 1,79,954     | 17,03.45                               | 49,90,499    | 1,27,13,510      | 19,01.75     | 41,72,011                        | 41,72,011    |
| (f) Switzerland                                 | —                | —            | —                | —            | —                | —            | 37.40            | 2,34,012     | 17,03.45                               | 49,90,499    | 1,27,13,510      | 19,01.75     | 41,72,011                        | 41,72,011    |
| (g) Italy                                       | —                | —            | —                | —            | —                | —            | 20,91.15         | 38,799       | 17,03.45                               | 49,90,499    | 1,27,13,510      | 19,01.75     | 41,72,011                        | 41,72,011    |
| (h) Other countries                             | 9.35             | 22,054       | 7.40             | 5,968        | 56.25            | 54,253       | 20,91.15         | 38,799       | 17,03.45                               | 49,90,499    | 1,27,13,510      | 19,01.75     | 41,72,011                        | 41,72,011    |
| Total.                                          | 15.95            | 52,550       | 179.60           | 5,71,437     | 1197.30          | 30,09,474    | 20,91.15         | 38,799       | 17,03.45                               | 49,90,499    | 1,27,13,510      | 19,01.75     | 41,72,011                        | 41,72,011    |

Source:— (1) Annual Statement of the Sea-Borne Trade of India for the Fiscal years ending 31st March 1947 & 1948.  
(2) Accounts relating to the Sea-Borne Trade and Navigation of India 1950.

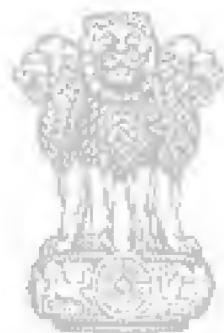
Sources: (i) Annual Statement of the Sea-Borne Trade of India for the Fiscal years ending 31st March 1947 & 1948.  
(ii) Accounts relating to the Sea-Borne Trade and Navigation of India 1950.

APPENDIX VIII (b)  
(vide paragraph 55)

STATEMENT SHOWING IMPORTS INTO INDIA OF TOTAL OF ALUMINIUM (IMPORTS, SHEETS, CIRCLES AND OTHER MANUFACTURES) SINCE 1944-45

| Year of Import            | 1944-45          |              | 1945-46          |              | 1946-47          |              | 1947-48          |              | 1948-49          |              | 1949-50          |              | 1950-51 (6 months from April to Sept.) |              |
|---------------------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|----------------------------------------|--------------|
|                           | Quantity<br>Tons | Value<br>Rs. | Quantity<br>Tons | Value<br>Rs. | Quantity<br>Tons | Value<br>Rs. | Quantity<br>Tons | Value<br>Rs. | Quantity<br>Tons | Value<br>Rs. | Quantity<br>Tons | Value<br>Rs. | Quantity<br>Tons                       | Value<br>Rs. |
| U.K. . . . .              | 306.80           | 7,40,579     | 3729.35          | 53,30,334    | 4042.15          | 99,82,121    | 5846.15          | 1,54,65,993  | 4732.05          | 1,25,52,130  | 4615.90          | 1,25,21,507  | 2791.15                                | 65,84,002    |
| Canada . . . . .          | 589.80           | 9,89,598     | 1167.30          | 19,71,977    | 7309.59          | 85,92,317    | 3960.75          | 59,25,105    |                  |              |                  |              |                                        |              |
| Australia . . . . .       | --               | --           | --               | --           | 61.95            | 11,763       | 10.55            | 19,125       |                  |              |                  |              |                                        |              |
| Netherlands . . . . .     | --               | --           | --               | --           | --               | --           | 3.60             | 21,832       |                  |              |                  |              |                                        |              |
| Belgium . . . . .         | --               | --           | --               | --           | --               | --           | 52.15            | 1,79,954     |                  |              |                  |              |                                        |              |
| Switzerland . . . . .     | --               | --           | --               | --           | --               | --           | 70.40            | 4,25,722     |                  |              |                  |              |                                        |              |
| Italy . . . . .           | --               | --           | --               | --           | --               | --           | 37.20            | 2,24,912     |                  |              |                  |              |                                        |              |
| U.S.A. . . . .            | 419.85           | 9,49,119     | 571.05           | 10,16,334    | 141.25           | 9,40,025     | 2195.35          | 55,87,809    | 1887.85          | 47,71,422    | 24.30            | 1,50,434     | 2.75                                   | 18,431       |
| Other countries . . . . . | 15.30            | 35,800       | 10.95            | 13,005       | 129.45           | 1,05,067     | 244.00           | 1,14,740     | 2397.70          | 91,85,929    | 2082.70          | 57,48,023    | 3981.80                                | 28,40,254    |
| Total . . . . .           | 1390.75          | 24,19,196    | 5477.95          | 90,21,951    | 11709.80         | 1,80,94,313  | 12449.45         | 2,86,95,293  | 9452.70          | 2,55,59,138  | 5972.90          | 1,84,20,054  | 6775.70                                | 1,12,42,987  |

Source:- (1) Annual statement of the Sea-Borne Trade of India for the fiscal years ending 31st March 1947 and 1948.  
(ii) Accounts relating to the Sea-Borne Trade and Navigation of India 1950.  
(\*) Imports relate to all countries except U.K. and U.S.A.



सत्यमेव जयते

|                                                                                               |         |
|-----------------------------------------------------------------------------------------------|---------|
| 37. Motor vehicle batteries (1948)                                                            | PTB 122 |
| 38. Hydraulic brake fluid (1948)                                                              | PTB 129 |
| 39. Bobbins (1948).                                                                           | PTB 128 |
| 40. Slate and slate pencils (1949).                                                           | PTB 138 |
| 41. Expanded metals (1949).                                                                   | PTB 150 |
| 42. Cotton textile machinery (ring frames, spindles, spinning rings and plain looms). (1949). | PTB 167 |
| 43. Small tools (1949)                                                                        | PTB 149 |
| 44. Plastics (1949)                                                                           | PTB 160 |
| 45. Soda ash (1949)                                                                           | PTB 165 |
| 46. Glass and glassware (1950).                                                               | PTB 174 |
| 47. Sterilised surgical catgut (1950).                                                        | PTB 184 |
| 48. Liver extract (1950).                                                                     | PTB 185 |
| 49. Fountain pen ink (1950)                                                                   | PTB 183 |
| 50. Pencils (1950).                                                                           | PTB 187 |
| 51. Fine chemicals (1950)                                                                     | PTB 192 |
| 52. Sago (1950).                                                                              | PTB 186 |
| 53. Belt fasteners (1950)                                                                     | PTB 189 |

#### (B) REVIEW CASES

(Continuance of Protection)

|                                                                                                               |         |
|---------------------------------------------------------------------------------------------------------------|---------|
| 1. Iron and steel manufactures (1947)                                                                         | PTB 106 |
| 2. Paper and paper pulp (1947).                                                                               | PTB 108 |
| 3. Cotton textile manufactures (1947)                                                                         | PTB 98  |
| 4. Sugar (1947).                                                                                              | PTB 107 |
| 5. Magnesium chloride (1948).                                                                                 | PTB 124 |
| 6. Silver thread and wire (1948).                                                                             | PTB 126 |
| 7. Bicycles (1949).                                                                                           | PTB 131 |
| 8. Artificial silk (1949).                                                                                    | PTB 132 |
| 9. Sericulture (1949).                                                                                        | PTB 133 |
| 10. Alloy tool and special steel (1949).                                                                      | PTB 136 |
| 11. Sodium thiosulphate, sodium sulphite and sodium bisulphite (under section 4(1) of the Tariff Act) (1949). | PTB 140 |
| 12. Calcium chloride (1949).                                                                                  | PTB 148 |
| 13. Grinding wheels (under section 4(1) of the Tariff Act) (1949).                                            | PTB 141 |
| 14. Hurricane lanterns. (under section 4(1) of the Tariff Act) (1949)                                         | PTB 144 |
| 15. Sugar (1949).                                                                                             | PTB 134 |
| 16. Preserved fruits (1949).                                                                                  | PTB 143 |
| 17. Coated abrasives (under section 4(1) of the Tariff Act) (1949).                                           | PTB 147 |
| 18. Antimony (1949).                                                                                          | PTB 161 |
| 19. Phosphates and phosphoric acid.                                                                           | PTB 164 |

|                                        |         |
|----------------------------------------|---------|
| 20. Starch (1949).                     | PTB 163 |
| 21. Bituminates (1949).                | PTB 168 |
| 22. Ferro-silicon (1949).              | PTB 169 |
| 23. Sewing machines (1949)             | PTB 170 |
| 24. Cocoa powder and chocolate (1949)  | PTB 172 |
| 25. Electric motors (1949).            | PTB 166 |
| 26. Steel belt lacing (1949)           | PTB 171 |
| 27. Cotton and hair belting (1949)     | PTB 173 |
| 28. Calcium chloride (1950)            | PTB 175 |
| 29. Sugar (1950).                      | PTB 179 |
| 30. Potassium permanganate (1950)      | PTB 176 |
| 31. Wood screws (1950)                 | PTB 177 |
| 32. Dry battery (1950)                 | PTB 180 |
| 33. Oleic acid and stearic acid (1950) | PTB 178 |
| 34. Plywood and teacheasts (1950)      | PTB 181 |

#### PRICE REPORTS

|                                                                                                                               |         |
|-------------------------------------------------------------------------------------------------------------------------------|---------|
| 1. Cotton yarn and cloth prices (1948)                                                                                        | PTB 127 |
| 2. Paper prices (1948).                                                                                                       | PTB 130 |
| 3. Fair ex-works prices of superphosphate (1949)                                                                              | PTB 139 |
| 4. Fair retention prices of steel produced by the Tata Iron & Steel Company and the Steel Corporation of Bengal (1949).       | PTB 135 |
| 5. Ex-works costs of hot metal (Iron for steel making) and fair ex-works prices of pig iron (Basic and foundry grade) (1949). | PTB 137 |
| 6. Fair retention prices of steel produced by Mysore Iron & Steel Works, Bhadravati (1949).                                   | PTB 151 |
| 7. Fair retention prices of steel produced by the Tata Iron & Steel Company and the Steel Corporation of Bengal (1951).       | PTB 205 |

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*All the above reports are available with the Manager of Publications, Civil Lines, Delhi, and the Secretary, Indian Tariff Board, Contractors Building, Nicol Road, Ballard Estate, Bombay I.*